

SCANNER

A JOINT PUBLICATION OF THE NORTHERN VIRGINIA AND WASHINGTON SECTIONS

March–April 2005

Volume 20, No. 2

Dr. Hratch Semerjian to Deliver Keynote Address at National Capital Area Awards Banquet in April

By Murty Polavarapu

The annual awards banquet of the IEEE National Capital Area will be held on April 16, 2005. (See calendar listing, p. 4, and registration form, p. 8, for details.)

This year, we will have the pleasure of hearing Dr. Hratch Semerjian, Acting Director of the National Institute

of Science and Technology (NIST). NIST is an agency of the Department of Commerce and "works with the private sector, other government agencies, and universities to develop and apply the technology, measurements and standards needed for new and improved products and services."

At the banquet, we will also recog-

nize the new IEEE Fellows from the local area as well as the IEEE volunteers who have made significant contributions to the success of our organization during 2004. Winners of IEEE prizes at Regional Science Fairs will also be on hand with their projects. The Northern Virginia Section is the host for this year's event and I encourage all of you to attend and make this a success.

New IEEE Fellows Recognized for Accomplishments

Congratulations to the following members in Northern Virginia and Washington Sections who have been recently conferred the IEEE Grade of Fellow in recognition of extraordinary records of accomplishments in their field.

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

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

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

Joseph Raymond Guerri, DARPA (Defense Advanced Research Projects Agency), Arlington, VA, for contributions to advanced radar theory and its embodiment in real world systems.

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

Jerry Meyer, Naval Research Labora-

tory, Washington, DC, for contributions to semiconductor optoelectronics.

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

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

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

Volunteers Needed for Scout Jamboree

The IEEE has a quarter-century-long history of support of the Scouting movement, to educate boys and girls about the fields of computers, electronics, and electricity. The Regional Activities Board has encouraged outreach efforts to young people for possible recruitment into engineering. Volunteers are needed at the IEEE Electronics Merit Badge Booth at the 2005 National Scout Jamboree to be held at Fort A. P. Hill in Caroline County, Virginia, near Fredericksburg. Over 40,000 Scouts and leaders from all over the country will live in tents from July 25 to August 3, participating in numerous activities including archery, games, confidence course, conservation programs, scuba, kayaking and rafting.

Volunteers will provide scouts with a four-hour instructional class in the basics of electronics so that the scouts can complete the requirements for the Electronics Merit Badge. Volunteers are also needed to answer questions

JAMBOREE

continues on page 7

New Chapter Officers Learn the Ropes at NCA Leadership Training Day



More than 50 people attended the IEEE National Capital Area Leadership Training day in February, which was organized by Doug Holly (left). Marc Apter (right), vice president of regional activities and former Region 2 director, gave an overview of membership development and the many programs available to help cultivate member participation, including the promotion of qualified individuals to Senior Member grade.



Thom Tullia (left), Region 2 director, meets Fred Seelig, Northern Virginia Section director, and two Communications Society (NV) officers: Yang Weng, secretary, and Dennis Moen, chair. Tullia discussed Region 2's plans and strategies for this year, including developing stronger ties with industry and government, and nurturing future IEEE leaders by focusing on student branches, GOLD chapters and PACE activities.

WASHINGTON SECTION

<http://ewh.ieee.org/r2/washsec>

Chair

Ron Ticker
301-286-1380
rticker@ieee.org

Vice Chair

Haik Biglari
301-228-3538
hbiglari@fairchildcontrols.com

Treasurer

Kiki Ikossi
703-960-0261
ikossi@ieee.org

Secretary

Richard Benjamin
301-228-3471
rbenjamin@fairchildcontrols.com

Past Chair

Howard Needham
240-314-1672
howardn@ieee.org

Directors

Doug Holly
dougholly@ieee.org

Howard Needham
howardn@ieee.org

Harry Sauberman
hrs@cdrh.fda.gov

Debi Siering
siering@ieee.org

Harold Stinger
hstinger@sgt-inc.com

Tim Weil
trweil@ieee.org

Steve Weiss
sweiss@arl.army.mil

NORTHERN VIRGINIA SECTION

<http://ieee-nova.org>

Chair

Murty Polavarapu
703-367-1497
murtyp@ieee.org

Chair Elect

Michael Cardinale
703-788-7754
cardinal@ieee.org

Treasurer

Syed Ahmed
703-298-5235
syed.f.ahmed@ieee.org

Secretary

Chuck Sisung
703-267-9524
sisung@ieee.org

Past Chair

Amarjeet Basra
703-324-2821
amarjeet.basra@ieee.org

Directors

David Booth
dbooth@ieee.org

Scott Goldstein
s.goldstein@ieee.org

Kerry Hartman
hartman_k@computer.org

Rex Klopfenstein
r.klopfenstein@ieee.org

P. Jeffrey Palermo
jpalermo@kemaconsulting.com

Fred Seelig
fseelig@mitre.org

Larry Stotts
lstotts@darpa.mil

Peter Sypher
p.sypher@ieee.org

NATIONAL CAPITAL AREA

Office Manager

Jackie Hunter
P.O. Box 220521
Chantilly, VA 20153
703-803-8701
Fax: 703-222-3208
nca-admin@ieee.org

IEEE REGION 2 SOUTH AREA*

Chair

Jerry Gibbon
202-276-2265
J.T.Gibbon@ieee.org

*Including Washington, Northern Virginia, and Baltimore Sections and Annapolis Subsection

SCANNER STAFF

Editor-in-Chief

Pete Sypher
703-216-3203
p.sypher@ieee.org

Managing Editor

Elsie Grant
301-661-5921
ncac-scanner@ieee.org

Northern Virginia Section Editor

Kerry Hartman
703-623-1432
hartman_k@computer.org

Washington Section Editor

Tim Weil
301-452-3641
trweil@ieee.org

Webmaster

Rex Klopfenstein
703-610-1534
r.klopfenstein@ieee.org

TECHNICAL SOCIETY AND AFFINITY GROUP CHAPTERS

Aerospace and Electronic Systems Society (W/NV)

Dr. Daniel S. Purdy
703-588-1920
Daniel_Purdy@onr.navy.mil
http://ewh.ieee.org/r2/wash_nova/aess

Antennas and Propagation Society (W/NV)

Dr. Scott Kordella
703-883-6282
kordella@mitre.org

Communications Society (W)

Mr. Doug Holly
240-404-1601
dougholly@ieee.org

Communications Society (NV)

Mr. Dennis Moen
703-625-2611
dennis.moen@ieee.org

Computer Society (NV)

Mr. Shahid Shah
703-475-6146
shahid.shah@ieee.org

Control Systems Society (W)

Mr. Richard Benjamin
301-228-3471
rbenjamin@fairchildcontrols.com

Control Systems Society (NV)

Mr. Seddik Benhamida
703-414-4082
sbenhamida@dc.devry.edu

Electromagnetic Compatibility Society (W/NV)

Mr. Greg Snyder
301-417-0220
gregs@will.com

Electron Devices Society (NV/W)

Mr. Murty Polavarapu
703-367-1497
murtyp@ieee.org
http://ewh.ieee.org/r2/no_virginia/eds

Engineering in Medicine and Biology (W/NV)

Dr. Robert Munzner
434-263-8862
r.munzner@ieee.org
members.aol.com/EMBDC

Engineering Management Society (W/NV)

Mr. Doug Holly
240-404-1601
dougholly@ieee.org
http://ewh.ieee.org/r2/wash_nova/ems/

Geoscience and Remote Sensing Society (W/NV)

Dr. Shunlin Liang
301-405-4556
sliang@geog.umd.edu

Industry Applications Society (W/NV)

Mr. Amarjeet S. Basra
703-324-2821
amarjeet.basra@ieee.org

Information Theory Society (W/NV)

Mr. Greg Strutt
301-483-0710
gstrutt@ieee.org

Lasers and Electro-optics Society (W/NV)

Dr. Mary S. Tobin
301-394-2046
mtobin@arl.army.mil

Magnetics Society (W/NV)

Dr. Can E. Korman
202-994-4952
korman@gwu.edu

Microwave Theory and Techniques Society (W/NV)

Mr. Amit Asthana
301-428-2786
amitasthana@ieee.org
www.ieee.org/mtt-wnva

Nuclear and Plasma Sciences Society (W/NV)

Mr. Harry Sauberman
301-443-8879
HRS@cdrh.fda.gov

Power Engineering Society (NV/W)

Mr. Chuck Sisung
703-267-9524
sisung@ieee.org

Signal Processing Society (W)

Mr. Ed Neal
301-428-9066
enealnrai@aol.com

Signal Processing Society (NV)

Dr. Timothy Settle
703-814-8247
settlet@saic.com

Society for Social Implications of Technology (NV/W/Baltimore)

Mr. Michael Cardinale
703-788-7754
cardinal@ieee.org

Vehicular Technology Society, Land Transportation Committee

Mr. Brad Luse
703-247-4491
bradley.luse@wgint.com

Southern Maryland Communication, Computer and EMC Chapter

Mr. Fred Heather
301-342-6975
heatherf@navair.navy.mil

Affinity Group Chapters

Consultants Network (W/NV)

Mr. Sai Chiang
703-203-0771
creativesystem@ieee.org
www.ieee-consultants.org

Graduates of the Last Decade (NV)

Mr. Chuck Baldi
703-675-0678
cbaldi@ieee.org

Life Members (W/NV)

Mr. John Margosian
301-365-1257
jmargo@ieee.org

Women in Engineering (W/NV)

To be determined
<http://ewh.ieee.org/r2/washsec/wie/>

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 editor 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 May-June issue is April 1, 2005

IEEE National Capital Area SCANNER is published bimonthly by The Institute of Electrical and Electronics Engineers, Inc. Corporate Office: 3 Park Avenue, 17th Floor, New York, NY 10016-5997. It is sent automatically at a cost of \$1.00 per member per year (included in annual dues) to each member of the Washington and Northern Virginia Sections. Periodicals postage paid at New York, NY, and at additional mailing offices: Postmaster: Send address changes to IEEE National Capital Area SCANNER, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331. (ISSN 0894-0452)

CALENDAR OF *events*

Tuesday, March 1, 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 I-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 at 703-803-8701 or nca-admin@ieee.org. Please include the term IEEE in the subject line of your e-mail.

Tuesday, March 1, 2005
How to Negotiate Successfully with a Real S.O.B.

Sponsor: Consultants Network, Washington and Northern Virginia Chapter
Speaker: Philip L. Marcus, President, Amberway Associates
Time: Dinner at 6:00 pm, speaker 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: Let's face it: in time, everybody meets a real S.O.B. over the negotiation table. Whether it's a boss or a business deal, sooner or later you run into someone who negotiates by bullying, desk pounding and wearing you down. Or maybe a steely cold stare. There are effective ways to cope with this type of behavior and to come out with what you want from the negotiation. Learn some winning strategies at this meeting.
Contact: Sai Chiang at 703-203-0771 or creativesystem@ieee.org

Wednesday, March 2, 2005
◆ Converting MATLAB Algorithms to FPGA or ASIC Designs

Sponsors: Signal Processing Society (NV), and Electrical and Computer Engineering Dept., George Mason University
Speaker: Michael Bohm, CTO and Vice President, AccelChip
Time: Refreshments at 7:00 pm. Lecture at 7:20 pm
Place: Johnson Center, Meeting Room C, George Mason University, Fairfax, VA
More Info: See Diamond story, p. 5, or http://ece.gmu.edu/~kwage/nova_sp.
Contact: Dr. Timothy F. Settle, 703-814-8247 or settlet@saic.com.

Wednesday, March 9, 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.

Thursday, March 10, 2005
PES and IAS Joint Meeting

Sponsors: Power Engineering Society, Northern Virginia Chapter; Industry Applications Society, Washington and Northern Virginia Chapter
Speaker: TBD
Time: Social hour at 5:45 pm, snacks at 6:00 pm, speaker at 6:30 pm
Place: Alexandria Research Institute, 206 N. Washington St., 4th floor, Old Town Alexandria
More info: Refreshments will include assorted sandwiches, potato chips, desert, coffee, tea and soda.
Cost: Free for members (including student members), \$10 for guests.
Contact: Please RSVP by Wednesday, March 9 at 5:00 pm, to Monica at 703-535-3446 or mmallini@vt.edu.

Tuesday, March 15, 2005

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

Thursday, March 17, 2005
Electromagnetic Compatibility Society Meeting

Time: TBD
Place: TBD
More Info: Advance planning for application to bring the 2010 IEEE EMC Society Symposium will be discussed. The goal is to have a committee of committed EMC-philes and Noise-o-phobes to discuss the planning for the event. We are working with the DC Convention Bureau on this project and are soliciting ideas and talents to put this together.
Contact: Greg Snyder or Mike Violette at 301-417-0220, or Leo Makowski at 703-365-2330.

Wednesday, March 23, 2005
Graduate Student Poster Competition

Sponsors: Lasers and Electro-Optics Society, Washington and Northern Virginia Chapter and Baltimore Chapter
Time: 6:00 to 8:30 pm
Place: Johns Hopkins Applied Physics Laboratory, Howard County Room 3, 11100 Johns Hopkins Road, Laurel, MD
Directions: Near the intersection of Rte. 29 and Gorman Road. See <http://www.jhuapl.edu/newscenter/visitor/visitorguide.html>.
More Info: See story, p. 7. Deadline for poster submission is Wednesday, March 16.
Contact: Mary Tobin at mtobin@arl.army.mil.

March 23-24, 2005
Third IEEE International Workshop on Information Assurance

Sponsor: IEEE Computer Society
Place: College Park, MD
More Info: See www.iwia.org/2005.
Contact: Computer Society, Conference Services, 202-371-1013.

Tuesday, March 29, 2005
◆ The Telecomm Marketplace: A Technology Analyst's Thoughts

Sponsor: Communications Society, Northern Virginia Chapter
Speaker: Susan Kalla, Senior Analyst and Senior Vice President, Friedman Billings Ramsey, Roslyn, VA
Time: Dinner 6:00 pm, speaker 6:45 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.
More Info: See Diamond Story, p. 5.
Cost: Free for IEEE members
Contact: Please RSVP to Fred Seelig at fseelig@mitre.org.

Wednesday, March 30, 2005
◆ Notable Wartime Applications of Technology

Sponsor: Life Members Chapter (Washington and Northern Virginia)
Speaker: Raymond Meixner
Time: 1:00 pm (lunch)
Place: Marco Polo Restaurant, 245 Maple Ave., West Vienna, VA
Directions: From I-66 take the Nutley Street exit, North to Vienna, turn right on Maple Ave., and find Marco Polo on the left.
More Info: Wartime applications of technology on the field of battle for tactical advantage are legendary. See Diamond Story, p. 5.
Contact: John Margosian at jmargo@ieee.org.

CALENDAR
continues on page 4

CALENDAR

continued from page 3

April 3-8, 2005**29th NASA Software Engineering Workshop**

Sponsor: IEEE Computer Society
Place: Greenbelt Marriott, Greenbelt, MD
More Info: See <http://sel.gsfc.nasa.gov/website/29ieee.htm>.
Contact: Computer Society, Conference Services, 202-371-1013.

Tuesday, April 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 I-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 at 703-803-8701 or nca-admin@ieee.org. Please include the term IEEE in the subject line of your e-mail.

Tuesday, April 5, 2005**The Business of Government: Technical Expertise in Demand**

Sponsor: Consultants Network, Washington and Northern Virginia Chapter
Speaker: Stanley L. Reid, Strategic Sciences
Time: Dinner at 6:00 pm; speaker 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: The government is a vast bureaucracy overseeing a \$2 trillion market in which private contractors play a significant operational role. There is a growing need for cutting edge technology and matching technical skill to meet increasingly complex operational needs. How should electrical engineers see themselves fitting into this new morphing market, and what are the opportunities for their skills? Mr. Reid owns Strategic Sciences, a government business development and lobbying firm that helps companies win federal contracts. He has more than 25 years of experience with congress, federal agencies and government contractors.
Contact: Sai Chiang at 703-203-0771 or creativesystem@ieee.org

Tuesday, April 12, 2005**Recent Advances in High Performance Communication Modules**

Sponsors: Microwave Theory and Techniques Society, Washington and Northern

Virginia Chapter; Communications Society, Northern Virginia Chapter and Washington Chapter

Speaker: Dr. Joy Laskar, Georgia Institute of Technology, Atlanta, GA.
Time: Reception 5:30 pm, dinner 6:00 pm (optional, reservations required), lecture 7:00 pm
Place: Mitre Corporation, Building 2, Room 1N100A/B, 7515 Colshire Drive, McLean, VA
Directions: Off Route 123 in Tysons Corner. See http://www.mitre.org/about/locations/mitre2_map.html.
More Info: See Diamond story, p. 5. Additional information is available at <http://ewh.ieee.org/r2/mtt-wnva>.
Cost: \$15 for optional dinner.
Contact: Reservations must be made by Thursday, April 7, by calling Roger Kaul at 301-394-4775 (no email please), or by contacting Fred Seelig at fseelig@mitre.org.

Wednesday, April 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.

Saturday, April 16, 2005**IEEE National Capital Area Awards Banquet**

Sponsors: Northern Virginia and Washington Sections
Speaker: Dr. Hratch G. Semerjian, Acting Director, National Institute of Science and Technology, Gaithersburg, MD
Time: Reception 6:30 pm, dinner 7:30 pm
Place: Grand Ball Room, 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: Join us to recognize distinguished IEEE members in the local area for their contributions and hear Dr. Hratch Semerjian's

Cost: perspective on technology issues. \$45 per person. Reservations required by April 1, 2005. See form on p. 8.
Contact: Jackie Hunter at 703-803-8701 or nca-admin@ieee.org for reservations. Please include the term IEEE in the subject line of your e-mail.

Tuesday, April 19, 2005

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

Spectrum Sharing Technology Discussed

The Northern Virginia Chapter of the Communications Society had a very exciting and interesting meeting in January on dynamic spectrum sharing. Attendance was overwhelming with standing room only to hear about advances in dynamic radio frequency spectrum sharing technology and policies. Our speaker, Mark McHenry, founder of Shared Spectrum Company, discussed many areas related to dynamic spectrum sharing, including detailed studies and analysis of spectrum use in New York City during the 2004 political convention.

He also covered the current strategies in technologies that enable efficient and reliable spectrum sharing and are destined to make 10x more spectrum available. Mark presented examples of spectrum sharing "behaviors" and reviewed regulatory and policy issues. The idea of spectrum sharing is advancing because the actual level of allocated spectrum use is low, and the perceived spectrum "shortage" exists because the 1930's spectrum access technologies predate the transistor.

Access to radio frequency spectrum has been in high demand for many years. With the advent of low cost RF devices, the Internet, and low cost computation devices, spectrum demand is growing exponentially. For example, the military is developing robotic vehicles, extensive information management systems, and distributed sensors that will require enormous amounts of spectrum. Microsoft, Intel and others are developing many new consumer wireless devices that will connect people and laptops to the Internet. Vast sums and effort have already been spent to acquire spectrum via auctions and by political and regulatory processes. Mr. McHenry's PowerPoint presentation, which includes many ideas for solving the spectrum shortage, may be downloaded at www.sharedspectrum.com/?section=presentations.

Scanner Seeks Applicants for New Advertising Position

The IEEE National Capital Area Scanner is a bi-monthly newsletter of the Northern Virginia and Washington Sections that reaches the desks of over 14,000 electrical engineering professionals. To develop the capacity of this publication to generate revenue and provide commercial messages of interest to the readership, the Sections have decided to prepare guidelines for the compensated position of Scanner Advertising Manager. Individuals who would be interested in applying for such a position are encouraged to contact Peter Sypher at 703-216-3203 or p.sypher@ieee.org.



DIAMOND STORIES



Wednesday, March 2, 2005 Converting MATLAB Algorithms to FPGA or ASIC Designs

(Sponsored by Signal Processing Society (NV))

In the DSP domain, MATLAB is the domain-specific language of choice, with 97 percent of DSP design implemented on dedicated DSP processors. MATLAB provides both an efficient system-level verification environment and an efficient path to implementation. Unfortunately, the process of converting MATLAB to C code to run on the processor is reaching its limits. A DSP processor's inherent limitation of serial operation is becoming a bottleneck for advanced high-performance algorithms. To solve this problem, a new methodology must be in place to convert algorithmic MATLAB to a register-transfer language (RTL) that can be used by industry-standard synthesis and verification tools. Companies that use the new methodology will benefit from greater productivity, both in terms of the domain-specific language and from the new breed of best-in-class tools they will enable.

This presentation will show the process of taking a MATLAB algorithm down to a silicon representation. It will demonstrate a design style and methodology for implementing this algorithm in either an FPGA or an ASIC.

Michael Bohm is chief technology officer and vice president of engineering for AccelChip, Inc. His experience includes managing an IC/ASIC development team at Harris Semiconductor, where he worked closely with the founders of Synopsys and was involved in compiler design. He holds a B.S. in electrical engineering from the Florida Institute of Technology.

Tuesday, March 29, 2005

The Telecomm Marketplace: A Technology Analyst's Thoughts

(Sponsored by Communications Society (NV))

Susan Kalla is recognized as one of the world's most prescient and accurate high-tech analysts. Ranked by Institutional Investor in 2002 and 2003, Ms. Kalla is known for downgrading the telecom sector in 2000 before it collapsed and for upgrading the sector to catch the upturn in 2003. Dow Jones' Barron's has profiled her views on the telecom sector and individual telecom equipment and services stocks many times, and she is a frequent guest on CNBC, PBS, and Bloomberg television. Her research is a synthesis of experience, well-placed sources, relevant focus, and a deep understanding of the intricacies of the industries she covers.

Ms. Kalla is a senior analyst and senior vice president for technology research, telecommunications equipment and services at Friedman Billings Ramsey. She joined FBR in May 2001 with eight years of Wall Street experience, including senior analytical positions with ING Barings Furman Selz and Soundview Financial Group. Ms. Kalla has also held research, marketing and business development positions in the telecommunications industry, and she began her career as an engineer for the Public Broadcasting Service. Ms. Kalla received her bachelor and master degrees from the University of Maryland.

Wednesday, March 30, 2005

Notable Wartime Applications of Technology

(Sponsored by Life Members Chapter (W/NV))

This talk will examine the technology of warfare in a historical perspective, focusing on the tactical

advantages where then-current technology was exploited for battlefield gains. Notable examples will be highlighted through the 19th Century, including the American Civil War. Technology exploitation reached early-modern standards during the 19th Century with telegraphic communications and aerial observation. The talk will include descriptions of changes in battlefield tactics with consequent effects on the political and social structure of the warring nations. Ultimate societal benefit of wartime technology exploitation will be noted. A future talk will explore battlefield technology applications during the war-plagued 20th Century.

Raymond Meixner is uniquely qualified to deliver this talk by virtue of his predilection for history and 45 years of experience in RF/microwave systems design engineering. His experience includes D&D of RF/microwave systems, klystrons, TWTAs, PIN switches, and search and surveillance radars. His academic background includes a B.E.E. and M.E.E. from PUNY, and membership in Eta Kapa Nu and Tau Beta Pi.

Mr. Meixner is a Senior Life Member of IEEE. He served as chair of the Washington chapter of the Microwave Theory and Techniques (MTT) Society, and was the digest editor for the 1998 MTT International Symposium.

Tuesday, April 12, 2005

Recent Advances in High Performance Communication Modules

(Sponsored by Microwave Theory and Techniques Society (W/NV), Communications Society (NV and W))

The networks of the future require functional improvement along each of the important transmission media: wireless and wired (optical and copper).

GMU Offers Certificate in Nanotechnology

By Kiki Ikossi and Murty Polavarapu

Nanotechnology has been widely recognized as the enabler of the next technological revolution. While more precise definitions exist, nanotechnology can be generally described as the science and technology of controlling and manipulating things at the atomic layer and nanometer (10^{-9} m) scale. Lux Research, a technology consulting firm, recently reported that total expenditures by federal and state governments in nanotechnology totaled \$1.4 billion in 2004. Competition is also mounting among various states to attract private investments in nanotechnology. Lux Research's ranking of states for economic development from nanotechnology placed Virginia and Maryland fourth and seventh respectively. With the enormous potential of nanotechnology comes the challenge of preparing a workforce skilled in this inter-disciplinary field.

Locally, George Mason University has taken the first steps in this direction by announcing a new graduate certificate program nanotechnology and nanoscience offered through the School of Computational Sciences at its Fairfax Campus. "Nanotechnology and nanoscience are of great importance in a wide range of industries and are fundamental for the success of the region and the nation in the 21st century," said Dr. Estela Blaisten-Barojas, certificate program coordinator. "Hence, it is imperative that these fields be incorporated into the education of the next generation of applied scientists and engineers."

According to Professor Blaisten-Barojas, the certificate program should be attractive to students and

However, an even more daunting challenge is the integration and coexistence of these technologies in both function and form. We present several important enabling technologies for future integrated multi-functional systems. The System-on-Package (SOP) paradigm provides a highly integrated, microminiaturized, multi-functional systems technology that optimizes the IC and the package implementation. This presentation will review the evolutionary trends in IC and module integration and how these trends are bounded by advanced communication applications. We consider the development of new module technologies for applications to millimeter wave gigabit wireless nodes and for active isolation in wireless systems.

Joy Laskar was born in Kharagpur, India and raised in Clemson, SC. He earned a B.S. degree in 1985 from Clemson University. He joined IBM's Thomas J. Watson Research Center and then moved to the University of Illinois at Urbana-Champaign, where he earned M.S. and Ph.D. degrees in electrical engineering in 1989 and 1991.

Prior to joining Georgia Tech in 1995, Dr. Laskar held faculty positions at the University of Illinois and the University of Hawaii. At Georgia Tech, he is currently the chair for the Electronic Design and Applications technical interest group, the Georgia Electronic Design Center (GEDC) Research Leader for Broadband Access Hardware, and the Packaging Research Center thrust leader for RF and Wireless. Dr. Laskar has established a prolific research program at Georgia Tech: over 150 publications, numerous invited papers, two spin-out high tech companies and several distinctions from professional societies. He is currently a Distinguished Microwave Lecturer for the IEEE MTT Society.

professionals who wish to benefit from the employment boom in the nanoscience fields. "Graduates will be well prepared to fill the demand for personnel with nanoscience training who can serve as process controllers in area fabrication facilities or participate as members of interdisciplinary science teams," she said.

Ideal candidates for the certificate are those who have a background in physical, chemical or material sciences or in any branch of engineering, and are either currently working in or planning to enter into the fields of nanotechnology and nanoscience.

The Mason graduate certificate is composed of five courses for 15 credit hours focusing on nanomaterials and nanostructures and their relation to bulk materials, as well as methods for characterization and production of nanomaterials. The first two courses, which are being offered in Spring 2005, are *Introduction to Nanomaterials and Interactions*, and *Nanoelectronics*. Other courses to be offered include *Strategies for Nanocharacterization*, *Survey of Nanostructures*, *Nanofabrication*, *Public Policy and Legal Issues in Nanotechnology*, and *Computational Modeling in Nanoscience*.

The deadline for applying to the program is May 18 for the summer semester, and August 15 for the fall semester. More information and application forms are available at <http://masonanoforum.gmu.edu/certificate.htm>. For other questions, contact Dr. Blaisten-Barojas at 703-993-1988 or blaisten@gmu.edu.

There is also a proposal to develop a set of graduate level courses in nanotechnology that can be developed and shared across all the universities in the state of Virginia.

Members Can Advance to Senior Membership and Enjoy Its Privileges

By Charles Ross and
Mike Cardinale

Do you have ten or more years of practice in the areas of engineering, computer science or information technology? Have you obtained significant achievements within your profession? Are you interested in receiving recognition for your professional accomplishments? If you can answer yes to these questions, then you are eligible to apply for IEEE's distinguished membership grade of Senior Member.

The Senior Member grade is approved and assigned by the IEEE Admission and Advancement Committee and reserved for professionally matured members who have demonstrated distinguished technical and professional performance.

Achievement of the Senior Member membership grade has benefits for both you and IEEE. As a Senior Member, you will receive professional recognition from your peers, an engraved plaque recognizing your accomplishments, and a letter of commendation to your employer highlighting your achievement of the Senior Member grade.

Equally importantly, the percent and number of IEEE Senior Mem-

bers reflects on the competence and prestige of IEEE and its products and services. Senior Members are eligible to hold executive IEEE volunteer positions and to serve as a reference for future Senior Member applicants. Also, upon approval of your Senior Member application, you will receive a \$25 certificate towards membership in one new IEEE Society.

Applying for the Senior Member grade is simple. Visit the IEEE website at www.ieee.org/organizations/rab/md/smprogram.html and complete an application. Applications can be completed online or via the submission of electronic forms. Make sure that you enter "Northern Virginia" or "Washington Section" as the nominating section in the nomination section of the application. (This will allow the section to receive special incentives associated with the current "Nominate a Senior member Initiative.")

Lastly, you will need to secure references from two IEEE members holding Senior Member, Fellow or Honorary member grade. Upon completion, submit your application along with a current resume. Without the nomination of the section, one needs three references.

While the Senior Member grade is reserved for distinguished IEEE mem-

bers, many current members already meet the requirements of the membership grade. Senior Member candidates shall be an engineer, scientist, educator, technical executive, or originator in IEEE-designated fields. Candidates shall have been in professional practice for at least ten years and shall have shown significant performance over a period of at least five of those years, such performance including one or more of the following:

- Substantial engineering responsibility or achievement
- Publication of engineering or scientific papers, books, or inventions
- Technical direction or management of important scientific or engineering work with evidence of accomplishment
- Recognized contributions to the welfare of the scientific or engineering profession
- Development or furtherance of important scientific or engineering courses in a program on the "reference list of educational programs" (REP list)
- Contributions equivalent to those listed above, in areas such as technical editing, patent prosecution, or patent law, provided these contributions serve to advance progress substantially in IEEE-designated fields.

Congratulations to These New Senior Members!

The following members of Northern Virginia and Washington Sections have been elevated to the Senior Member level in January.

Farid Ahmed
Charles E. Cote
Weiping Dou
Fariba Fahroo
Edward J. Kim
Richard H. Lamb
Justin E. Manley
J. Scott Marcus
Ziaur Rahman
Tirumale K. Ramesh
Anthony D. Scott
Barry C. Tilton
Jack Tsou

The Senior Member grade allows you to take your IEEE membership to the "next level." If you have questions about the Senior Member grade or need assistance in completing your application or in securing appropriate references, contact Mike Cardinale, cardinal@ieee.org, for the Northern Virginia Section, or Howard Needham, howardn@ieee.org, for the Washington Section.



IEEE 2005 International Radar Conference

May 9 – 12, 2005
Crystal Gateway Marriott
1700 Jefferson Davis Highway
Arlington, Virginia 22202

Radar – A Global Perspective The Premier Radar Conference Held Every Five Years

Keynote Session:

Space Based Radar
Chaired By: Taylor Lawrence
Northrop Grumman Corporation

Banquet Guest Speaker:

Major General
George Harrison,
USAF Ret.
Georgia Tech Research
Institute.

21st-century Radar:
What Do Users Want?



Messages From:

World Leaders On Radar's Role In Future Advanced Systems

Features:

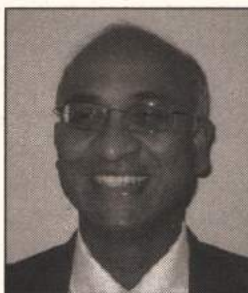
- Over 200 Papers From 23 Countries
- 21 Sessions, Including General Plenary Poster Sessions
- Study Center/Library
- 3 Student Poster Sessions
- 15 Tutorials Radar '05' University
- Over 20 Exhibits

For More Information And To Register Please Visit:
RADAR 2005 Website: www.ieee.org/radar05

Northern Virginia Chair's Column

By Murty Polavarapu

The new year has started out well with excellent turnout of volunteers at the January 12 AdCom meeting. At the meeting, we passed the motions for the 2005 budget and continuation of eScanner. I am gratified by the enthusiasm and support of the members to our program of activities for this year.



Murty Polavarapu

We were also fortunate to have Thom Tullia, Region 2 Director and Northern Virginia Section member address the meeting. Ralph Russell II from the Richmond Section described the IEEE Emerit Badges program as providing a global non-discriminatory pre-college technology education program for boys and girls. I strongly urge you to consider volunteering at the 2005 U.S. National Scout Jamboree

in Caroline County, VA from July 25 to August 3. For more details, please see the story on p. 1 or go to www.emeritbadges.org.

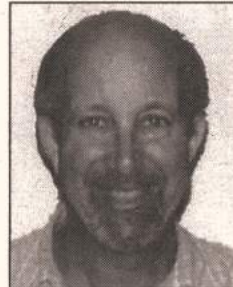
February will be a busy month with the activities of the National Engineers Week. Syed Ahmed, Kerry Hartman and others are playing a key role representing IEEE at the Zoom into Engineering Family Day on February 19 at the National Building Museum.

Many of you have volunteered to judge at the local area Science Fairs and I am thankful to Fred Seelig for coordinating these events again this year.

In the coming months, I will make every effort to attend more chapter meetings to gather your suggestions on how we can further improve section activities. I also hope to see more of you at the monthly AdCom meetings!

Scanner Staff Adds Washington Section Editor

IEEE Senior Member, Tim Weil, has joined the Scanner editorial staff as the Washington Section editor. Tim takes over from Doug Holly who was working the Scanner beat as an interim editor. As section editor, Mr. Weil will be working with Peter Sypher, editor-in-chief; Kerry Hartman, Northern Virginia Section editor; and Elsie Grant, managing editor.



Tim Weil

The duties of section editor include chapter liaison, technical editing, and community outreach for the compilation of both eScanner and bi-monthly Scanner issues. Mr. Weil brings 10

years experience as a technical editor for the IEEE publications *Computer*, *Internet Computing* and *Security & Privacy* magazines. He also holds an M.S. in computer science from Johns Hopkins University and is an industry-accredited Security and Privacy professional (CISSP).

IEEE directors, chapter chairs, and members of the Washington IEEE community are encouraged to contact him for monthly Scanner submissions. Just remember to "cross your eyes, and dot your tees." His email address is trweil@ieee.org.

Graduate Student Poster Competition

The IEEE Lasers and Electro-Optics Society chapters in Baltimore and Washington-Northern Virginia are proud to co-host a graduate student poster competition to foster industry-academia collaboration and knowledge transfer covering all areas of optical science and technology. We welcome original or recently published poster presentations from graduate students in the Baltimore-DC-Northern Virginia area. An independent panel of judges will evaluate the posters, and a cash award of \$300 and merit certificate will be

awarded to the best poster.

The poster competition will be held on Wednesday, March 23 at the Johns Hopkins Applied Physics Laboratory (see Calendar listing, p. 3). Refreshments will be served during the competition. The deadline for poster submission and for attendees to RSVP is March 16, 2005.

Please visit the Baltimore chapter website at www.ieee.org/BaltimoreLEOS/ or the Washington and Northern Virginia LEOS website at http://ewh.ieee.org/r2/wash_nova/leos for details regarding submission guidelines.

Radar Conference Seeks Helpers

Tom Fagan, chair of Radar 2005, is seeking volunteers to help during the conference, May 9-12, in Arlington.

The Radar Conference is held in the Washington Metropolitan area every five years. It was a great success in 2000, and we expect this one to be equally popular.

The Washington and Northern Virginia Sections have traditionally supported the Conference by providing seed money as well as volunteers.

Volunteers are needed for the following activities:

- Study Center. Assist conference attendees with using reference materials and computer facilities.
- Membership Booth. Provide additional information to supplement the printed material about IEEE membership, benefits, publications, etc.
- Spouse Hospitality. Speak to spouses of attendees for 15 to 20 minutes each morning, to tell them about local attractions and answer questions.

JAMBOREE

continued from page 1

and pass out materials at the IEEE booth, and to help construct the booth before the Jamboree starts. The primary function of the part-time volunteers will be to serve as assistant instructors. Volunteers can view the instructional material and find other information, including a registration form at www.emeritbadges.org. If you can contribute to this very worthy effort, please register very soon, so that the IEEE Richmond Section organizers can include you in their planning.

- Technical Tours. Serve as an escort or docent for people who have signed up for a technical tour.

If you are able to serve as a Volunteer, please contact Jackie Hunter at j.hunter@ieee.org or 703-893-8701, indicating the activity, and date and time when you will be available.



A. JAMES CLARK
SCHOOL OF ENGINEERING

*Ranked No. 16 in the Nation
according to U.S. News &
World Report*

Expand your knowledge to meet
today's engineering challenges

Enroll in:

**GRADUATE CERTIFICATE IN
ENGINEERING**

or

MASTER OF ENGINEERING

Courses, taught by world-
renowned faculty and field
experts, provide opportunities to
sharpen your technical expertise
in a broad spectrum of cutting
edge engineering specialties.

Begin your journey with this
part-time graduate program.

Call or visit today
301.405.0362
www.enpm.umd.edu

Solve Our Nation's Toughest Signal Processing Problems!

Science Applications International Corporation (SAIC), a Fortune 500® company, with more than 45,000 employees, is the largest employee-owned research and engineering company in the nation. SAIC provides information technology, systems integration and eBusiness solutions to customers, worldwide. We are seeking highly qualified engineers, research scientists, mathematicians, and statisticians to conduct exciting research and development of world-class technologies for a wide range of government customers. Opportunities exist within our Chantilly, VA office in the following areas:

Communications

- > CDMA/TDMA/FDMA Systems
- > Spectral estimation, adaptive equalization
- > Geolocation: TDOA/FDOA/CAF analysis
- > Specific Emitter Identification

Synthetic Aperture Radar (SAR)

- > Advanced Image Formation
- > Detection and Automatic Target Recognition
- > Image Compression and Analysis
- > Non-Imaging Exploitation of SAR data

Pulsed-Doppler Radar

- > Space-Based Radar System Design and Analysis
- > Advanced Space-Time Adaptive Processing
- > Moving Target Indication
- > Target Tracking > Signature Analysis

Electromagnetic Research

- > Computational & Theoretical Electromagnetics
- > Radar Scattering & Radiation
- > Antenna Design & Development

Candidates should have extensive research skills and technical computing experience, MATLAB strongly desired. Background in statistical signal processing and applied linear algebra desired. MS and PhD degrees preferred. All applicants must be eligible to obtain a Top Secret security clearance to be considered for employment. To have your qualifications confidentially reviewed, forward your resume to: tribu.jobs@saic.com, reference "IEEE Scanner". To review job descriptions and apply online directly, go to www.saic.com, select "Job Opportunities", choose "Search Jobs by" and enter Job Reference Number **DJD109928**. Written inquiries should be directed to SAIC ATTN: Michael Biega, 4501 Daly Drive Suite 400, Chantilly, VA 20151.

We are an Affirmative Action Employer who values cultural diversity in the workplace. EOE, M/F/D/V.



IEEE NATIONAL CAPITAL AREA ANNUAL AWARDS BANQUET

SATURDAY, APRIL 16, 2005

GRAND BALL ROOM, TYSONS CORNER MARRIOTT

8028 LEESBURG PIKE, VIENNA, VA.

RECEPTION: 6:30 pm

DINNER: 7:30 pm

AWARDS PRESENTATION: 8:30 pm

SPEAKER: Dr. Hratch G. Semerjian, Acting Director
National Institute of Science and Technology
Gaithersburg, MD.

Reservations: Email Jackie Hunter at nca-admin@ieee.org or mail the reservation form to Jackie Hunter, P.O. Box 220521, Chantilly, VA 20153. You may also fax the form to 703-222-3208.

Please make reservations by April 1, 2005.

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.

Reservation Form

(The cost is \$45 per person or \$450 for a table of ten)

Name: _____ \$ _____

Guest: _____ \$ _____

Table(s) _____ for 10 at \$450 \$ _____

Total \$ _____

Please provide _____ vegetarian meal(s)

_____ Check enclosed. Please make check payable to IEEE Northern Virginia Section.

If you wish to be seated with your group (chapter or affinity group), please specify _____

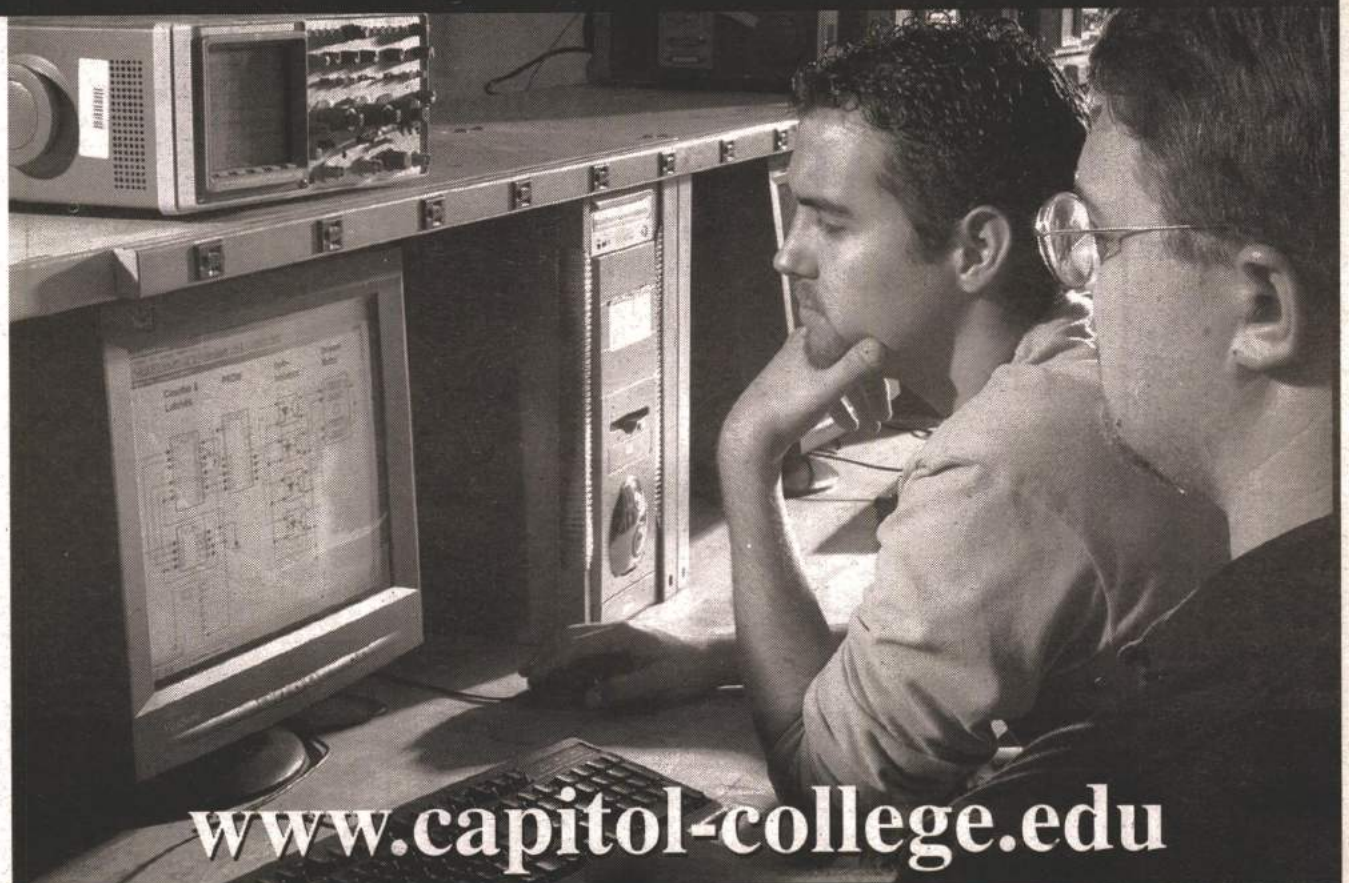
CAPITOL COLLEGE

Engineering • Computer Sciences • Information Technologies • Business

Capitol College
salutes engineers
during National
Engineers Week!



electrical engineering
computer engineering
aeronautical engineering
software engineering



www.capitol-college.edu