



Celebrating 125 Years
of Engineering the Future

Scanner

A Joint Publication of the Washington and Northern Virginia Sections
www.ieee.org/escanner

Volume 24, No. 4
July–August 2009

A Day on Capitol Hill

(left to right) Dr. Saj Durrani, Dr. Haik Biglari and Tim Weil of the Washington Section took IEEE's message to Capitol Hill in April. While participating in Congressional Visits Day, they thanked lawmakers for including R&D projects in recent legislation, and discussed issues that affect engineers.



In This Issue

Congressional Visits Day.....	1
2009 IEEE Fellows	1
DCCEAS Engineer of the Year .	1
Calendar of Events	3
Awards Banquet	4
IEEE-USA Meeting Report ...	6
Hank Carter	7
125th Anniversary.....	8

Washington Section Members Talk to Policy Makers During Congressional Visits Day

Washington Section Administrative Committee (AdCom) representatives Dr. Saj Durrani, Dr. Haik Biglari and Tim Weil visited Capitol Hill in April to express appreciation to Congress for recent appro-

priations actions in the FY09 spending bill and American Recovery and Reinvestment Act, which will fund research and development projects.

The Washington AdCom group joined more than 200

scientists, engineers and business leaders who made visits on Capitol Hill as part of the fourteenth Congressional Visits Day, an annual event sponsored by the Science–Engineering–Technology Work Group.

While visiting congressional offices, the Washington Section contingent discussed the importance of the nation's broad portfolio of investments in science, engineering and technology to promoting our country's prosperity and innovation. Most importantly,

they provided a constituent perspective on the local and national impact of these programs and their significance to Washington and Northern Virginia area programs. They also spoke about issues affecting IEEE members such as energy policy, globalization and career development programs.

Washington Section Chair Tim Weil noted, "I was pleased to have the opportunity to participate in this event. I feel strongly that making our voices heard to our elected represen-

tatives in Washington is critical to ensure ongoing support of federal R&D programs."

More than 50 percent of all industrial innovation and growth in the United States since World War II can be attributed to advances pioneered through scientific research, with publicly funded R&D the vital foundation for today's scientific and technological progress. Achievements from federally funded science, engineering and technology in-

See **CAPITOL HILL**, p. 7

Congratulations, 2009 Fellows!

Six IEEE members from the National Capital Area have been named 2009 Fellows. They are:

Gerald V. Blessing, National Institute of Standards and Technology, for contributions to ultrasonic techniques in materials evaluation and sensor systems.

Dennis Brian Brown, retired from the U.S. Naval Research Lab, for contributions to radiation effects in semiconductor devices for space microelectronics.

Gerald Cooperstein, of the Naval Research Laboratory, for contributions to pulsed power and intense electron and ion beam technologies and development of x-ray sources for pulsed radiography.

Dr. Bijan Jabbari, George Mason University, for con-

tributions to resource management and mobility in wireless networks.

Dr. Yicheng Wang, National Institute of Standards and Technology, for contributions to precision electrical measurements in realization of the International System of Units Farad and Ohm.

Dr. John C. Zolper, Raytheon, for leadership in compound semiconductor electronics.

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.

Dr. Biglari Honored as Engineer of the Year by DCCEAS

Dr. Haik Biglari, P.E., was recognized as the Engineer of the Year by the District of Columbia Council of Engineering and Architectural Societies (DCCEAS) at their annual banquet during National Engineers Week in February. He was nominated for the honor by IEEE.

Dr. Biglari was recognized for his extensive experience in the area of control systems design and analysis, specifically: trajectory optimization performed on NASA's X-33 Single Stage to Orbit Unmanned Reusable Launch Vehicle. The

trajectory optimization entails finding a trajectory that minimizes fuel consumption while achieving the flight objectives. A 1/5 scaled version of the RLV was successfully tested in December 2007 by Lockheed Martin. The award recognized his contribution to electronics hardware and software development, specifically, his contribution to automatic code generation concept.

In addition, he was also recognized for his contribution as an educator, teaching courses at University of Alabama for five years, teaching at the Uni-

versity of Maryland for two years, and conducting continuing education classes and serving as a board member of the University Industry Advisory Committee for the University of Alabama in Huntsville for two years. He has also supported regional, national and international science and engineering fairs for the past 12 years.

Dr. Biglari's service to IEEE includes chairing the Huntsville and Washington Sections, serving as Treasurer of the Washington Section, and revis-

See **BIGLARI**, p. 8

WASHINGTON SECTION

www.ieee.org/washsec

Chair

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

Vice Chair

Dr. Raj Madhavan
301-975-2865
raj.madhavan@ieee.org

Treasurer

Dr. Mary Tobin
301-587-0971
mtobin@ieee.org

Secretary

Ms. Monica Taysing-Lara
202-725-2225
m.taysinglara@ieee.org

Past Chair

Mr. Gerard J. Christman
703-697-8195
gerard.christman@ieee.org

Directors

Mr. Gerard J. Christman
gerard.christman@ieee.org

Dr. Paul Cotae
pcotae@udc.edu

Mr. Roger Hardwicke
rogerchmd@gmail.com

Dr. Kiki Ikossi
ikossi@ieee.org

Ms. Fari Schlake
fschlake@gmail.com

Mr. Tom Starai
starai@ieee.org

NORTHERN VIRGINIA SECTION

http://ieee-nova.org

Chair

Ms. Monica A. Mallini, P.E.
703-765-6303
m.a.mallini@ieee.org

Vice Chair (Chair Elect)

Mr. Barry Tilton, P.E.
703-298-3371
barrytilton@ieee.org

Treasurer

Dr. Timothy Settle
703-814-8247
t.settle@ieee.org

Secretary

Mr. Jeff Poston
703-983-7020
poston@ieee.org

Past Chair

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

Directors

Mr. Chuck Baldi
cbaldi@ieee.org

Mr. Sirak Belayneh
sbelayne@ieee.org

Ms. Laura J. Black
astarte@ieee.org

Ms. Susanne Dreier
susie.dreier@yahoo.com

Dr. Vinod Mishra
vmishra@ieee.org

Ms. Katie Schaffold
katie.schaffold@ieee.org

Student Representative

Ms. Diba Khan
dkhan1@gmu.edu

Family Liaison

Ms. Betsy Gibbon
j.t.gibbon@ieee.org

SCANNER STAFF**Editor-in-Chief**

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

Managing Editor

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

Northern Virginia Section Editor

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

Washington Section Editor

Mr. Wally Lee
301-468-2418
w.h.lee@ieee.org

Webmaster

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

Advertising Manager

Mr. Dave Booth
540-364-1350
dbooth@ieee.org

NATIONAL CAPITAL AREA**Billing & Correspondence Address**

Dr. Timothy Settle
IvySys Technologies
Suite 1109
2001 Jefferson Davis Highway
Arlington, VA 22202

IEEE REGION 2 SOUTH AREA***Chair**

Mr. Gerard J. Christman
703-697-8195
gerard.christman@ieee.org

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

ON THE WEB**eScanner Calendar of Events**

The calendar is available at www.ieee.org/escanner. 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.comunities.org/ncac.

CHAPTERS**Council Chapters****Nanotechnology (NV/W)**

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

Sensors (NV/W)

Dr. Raj Madhavan
301-975-2865
raj.madhavan@ieee.org

Technology Management (W/NV)

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

Technical Society Chapters**Aerospace and Electronic Systems Society (W/NV)**

Dr. William Culver
202-696-3763
wculver@alum.mit.edu
http://ewh.ieee.org/r2/wash_nova/aess

Antennas and Propagation Society (W/NV)

Dr. Brian Riely
410-733-5984
brian.riely@ieee.org

Communications Society (NV)

Dr. Vinod Mishra
908-616-3022
vmishra@ieee.org

Communications Society (W)

Ms. Debi Siering
siering@ieee.org

Computer Society (NV/W)

Mr. Tom Starai
703-927-5328
starai@ieee.org
http://ewh.ieee.org/r2/wash_nova/computer/

Control Systems Society (NV)

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

Control Systems Society (W)

Dr. Haik Biglari, P.E.
301-228-3538
hbiglari@comcast.net

Education Society (W/Baltimore)

Dr. Charles Kim
202-806-4821
ckim@howard.edu

Education Society (NV/Central VA/Hampton Roads/Richmond)

Ms. Jennifer Polack-Wahl
540-654-1318
polack@umw.edu

Electromagnetic Compatibility Society (Southern Maryland)

Mr. Fred Heather
240-924-8659
heatherf@ieee.org

Electromagnetic Compatibility Society (W/NV)

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

Electron Devices Society (NV/W)

Dr. Dimitrios E. Ioannou
703-993-1580
dioannou@gmu.edu
www.ieee.org/eds_nova

Engineering in Medicine and Biology Society (W/NV)

Mr. Harry Sauberman, P.E.
703-868-3457
hsauberman@ieee.org
http://ewh.ieee.org/r2/no_virginia/embs

Geoscience and Remote Sensing Society (W/NV)

Dr. James C. Tilton
301-286-9510
james.c.tilton@nasa.gov
http://ewh.ieee.org/r2/no_virginia/grss

Industry Applications Society (W/NV)

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

Information Theory Society (W/NV)

Mr. James Christian
240-472-9323
jchristian@wmata.com

Magnetics Society (W/NV)

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

Microwave Theory and Techniques Society (W/NV)

Mr. Bruce J. Levine
410-953-7549
bruce.levine@ieee.org
www.ieee.org/mtt-wnva

Nuclear and Plasma Sciences Society (W/NV)

Mr. Harry Sauberman, P.E.
703-868-3457
hsauberman@ieee.org

Oceanic Engineering Society (W/NV)

Mr. Mike Goldberg
703-610-1717
mgldbrg@hotmail.com

Photonics Society (W/NV)

Dr. Thomas E. Murphy
301-405-3602
tem@umd.edu
http://ewh.ieee.org/r2/wash_nova/leos/

Power and Energy Society (NV/W)

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

Professional Communication Society (NV/W/Baltimore)

Mr. Hugh Owen
301-622-3908
hugh.owen@ieee.org

Reliability Society (W/NV)

Dr. Rakesh Chopra
rchopra@sti-inc.com

Robotics and Automation Society (W/NV)

Dr. Raj Madhavan
301-975-2865
raj.madhavan@ieee.org
<http://ewh.ieee.org/r2/washsec/ras/>

Signal Processing Society (NV)

Mr. Jeff Poston
703-983-7020
poston@ieee.org
http://ewh.ieee.org/r2/no_virginia/sp

Signal Processing Society (W)

Dr. Min Wu
301-405-0401
minwu@umd.edu

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

Mr. Barry Tilton, P.E.
703-298-3371
barrytilton@ieee.org

Vehicular Technology Society, Land Transportation Committee

Mr. Karl W. Berger, P.E.
703-803-7917
kwb@dcm-va.com
www.ieee.org/dc-ltc

Affinity Groups**Graduates of the Last Decade (NV)**

Mr. Ahmed Bajwa
571-215-6053
bajwa@ieee.org

Graduates of the Last Decade (W)

Mr. Atanas Atanasov II
202-421-6879
ata.atanasov@gmail.com

Life Members (W/NV)

Mr. Dave Booth
540-364-1350
dbooth@ieee.org

National Capital Area Consultants' Network (W/NV)

Ms. Monica A. Mallini, P.E.
703-765-6303
m.a.mallini@ieee.org

Women in Engineering (W/NV)

Ms. Varetta Huggins
vhuggins@ieee.org

EDITORIAL POLICIES AND PROCEDURES**Calendar Announcements**

Please submit calendar items in the format used in the Calendar of Events. You can send email to ncac-scanner@ieee.org. Events must have an IEEE or affiliate sponsor.

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.

Articles

Other contributions, such as reports on chapter events and other member activities, are most welcome. Please submit articles to the managing editor at ncac-scanner@ieee.org.

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 observed 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.

September–October issue deadline: August 1, 2009

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

Wednesday, July 8, 2009

Northern Virginia Section Administrative Committee Meeting

- Time:** Dinner 6:00 pm, meeting 6:30 pm
Place: Virginia Tech Advanced Research Institute, Tower Room, Suite 750 (7th Fl.), 4300 Wilson Blvd., Arlington, VA
Directions: From Ballston Metro Station (Orange line), turn right at top of escalator then left on the street. Proceed two blocks toward Macy's, turn right and walk one block to Ballston Point at the intersection of Wilson Blvd. and Glebe Rd. If driving, see www.ari.vt.edu/ari_directions.html. There is a parking garage in the building with a \$1 charge for 3 hours. After 6:00 pm, there is limited free street parking.
More Info: All interested IEEE members are invited to attend.
Contact: Please use the IEEE vTools application to preregister at http://meetings.vtools.ieee.org/meeting_view/list_meeting/827 or contact Jeff Poston at poston@ieee.org or 703-983-7020.

Tuesday, July 28, 2009

Computer Society Meeting

- Sponsors:** Computer Society, American Society for Quality (ASQ) Section 509 Software SIG, Society for Software Quality (SSQ)
Speaker: TBA
Time: 6:30 pm
Place: Video teleconference with sites in McLean and Silver Spring. Addresses are provided at the registration link below.
More Info: All interested IEEE members and guests are invited to attend. Pizza and soda will be served.
Cost: Free
Contact: Advance registration is required to enter the facilities. Please register online at www.asq509.org/ht/d/sp/i/2499/pid/2499. If your plans change, please email ankums@mitre.org to cancel your reservation.

Probability Density Problem (Solution on page 6)

A random variable has a probability density function $f(x)$ defined over all x , that is,

$$\int_{-\infty}^{\infty} f(x) dx = 1.$$

If the mean value of this random variable is three and the variance is zero, what is $f(x)$?

Wednesday-Friday, August 5-7, 2009

IEEE Conference on the History of Technical Societies

- Sponsors:** IEEE History Committee, IEEE History Center
Cosponsors: Electrical and Computer Engineering Department, Drexel University; History and Sociology of Science Department, University of Pennsylvania
Speaker: Henry Petroski, author and professor, Duke University (banquet keynote)
Place: Multiple locations in Philadelphia, PA
More Info: The conference includes a full program of historical talks, a banquet, excursions to the ENIAC Museum and the American Philosophical Society, and a workshop on oral-history interviewing. The historical sessions will take place at the University of Pennsylvania on the first day of the conference and at Drexel University on the second and third days.
 Conference registration is not required to attend the banquet on Thursday, August 6 at the Down Town Club.
 For more details, hotel information, and a registration link, go to www.ieee.org/go/historyconference.

- Cost:** Before July 17, IEEE members \$250, non-members \$275, student members \$175, Life members \$175. After July 17, add \$25. Banquet only \$75 (\$85 after July 17). No banquet tickets will be sold after August 1. Go to the URL above to register online.

Saturday, August 8, 2009

Washington Section Picnic

- Time:** 12:00-3:00 pm
Place: Cabin John Regional Park, Pavilion A, 7400 Tuckerman Lane, Rockville, MD
More Info: All IEEE members are welcome.
Contact: RSVP to Monica Taysing-Lara at m.taysinglara@ieee.org or 202-725-2225.

Wednesday, August 12, 2009

Northern Virginia Section Administrative Committee Meeting

- Time:** Dinner 6:00 pm, meeting 6:30 pm
Place: Virginia Tech Advanced Research Institute, Tower Room, Suite 750 (7th Fl.), 4300 Wilson Blvd., Arlington, VA
Directions: From Ballston Metro Station (Orange line), turn right at top of escalator then left on the street. Proceed two blocks toward Macy's, turn right and walk one block to Ballston Point at the intersection of Wilson Blvd. and Glebe Rd. If driving, see www.ari.vt.edu/ari_directions.html. There is a parking garage in the building with a \$1 charge

for 3 hours. After 6:00 pm, there is limited free street parking.

- More Info:** All interested IEEE members are invited to attend.
Contact: Please use the IEEE vTools application to preregister at http://meetings.vtools.ieee.org/meeting_view/list_meeting/829 or contact Jeff Poston at poston@ieee.org or 703-983-7020.

Wednesday-Friday, August 12-14, 2009

17th International Conference on Geoinformatics

- Sponsor:** IEEE Geoscience and Remote Sensing Society
Place: George Mason University, Fairfax, VA
More Info: See the conference website at www.geoinformatics2009.org.
Contact: Send questions to info@geoinformatics2009.org, or contact Dr. Aijun Chen, Conference Secretary, at 301-614-5152 or achen6@gmu.edu.

Tuesday, August 25, 2009

Agile Methods

- Sponsors:** Computer Society, American Society for Quality (ASQ) Section 509 Software SIG, Society for Software Quality (SSQ)
Speaker: Camille Bell
Time: 6:30 pm
Place: Video teleconference with sites in McLean and Silver Spring. Addresses are provided at the registration link below.
More Info: All interested IEEE members and guests are invited to attend. Pizza and soda will be served.
Cost: Free
Contact: Advance registration is required to enter the facilities. Please register online at www.asq509.org/ht/d/sp/i/2499/pid/2499. If your plans change, please email ankums@mitre.org to cancel your reservation.

Senior Members

Congratulations to the following new Senior Members in the Northern Virginia (NV) and Washington (W) Sections:

Sung Ki Park (NV)
 Meredith Reed (W)
 Monica Taysing-Lara (W)
 John Zhang (NV)

If you are interested in becoming a Senior Member, please see www.ieee.org/seniormember for qualification requirements.

For assistance with references, Northern Virginia Section members may contact Monica Mallini at m.a.mallini@ieee.org and Washington Section members may contact Raj Madhavan at raj.madhavan@ieee.org.

Banquet Speakers Review Past 125 Years, Predict Exciting Future for Engineers



1—Murty Polavarapu thanks keynote speaker Dr. Frederica Darema. (Photos by Michael Pearse, Baltimore GOLD Chapter.)
 2—Gerard Christman, Banquet Co-Chair, presents the Washington Section's Distinguished Service Award to Dr. Stanley Onye.
 3—William P. Walsh, Region 2 Director, presents the IEEE Friend of MGA Board award to Jeff Poston of MITRE Corp.
 4—Tim Weil, Washington Section Chair, shows banquet guests his poster featuring AIEE branch chairs from 1903-1953.

IEEE's 125th anniversary provided the theme for this year's IEEE National Capital Area Awards Banquet hosted by the Northern Virginia Section on Saturday, May 2.

Keynote presentations by two IEEE Fellows focused on the impact that engineers have had on the world and how they will shape the future.

Dr. Frederica Darema, an IEEE Fellow and senior science analyst in the National Science Foundation's Directorate for Computer & Information Science & Engineering, talked about the need for a multidisciplinary approach to solving the engineering challenges of the 21st century.

In her presentation, "The Science in Engineering and the Engineering in Science," she emphasized the synergy between the two disciplines.

"How we do science and how we do engineering evolves over time, but the symbiosis of science and engineering will always remain," she said.

Following Dr. Darema's presentation, the two-person team of Dr. Charles Alexander and James Watson, P.E., considered the technological advances of the past 125 years and why this is an exciting time to be an engineer.

In their presentation, "Enjoying the Past and Heading for the Future," they contended that, following the Agricultural Age and the Industrial Age, the world is now experiencing the Age of the Engineer.

Since all of our basic needs can be furnished by the labor of 20 percent of the population, the other 80 percent can be engaged in making life better and more enjoyable, they said. Engineers now have the opportunity to find lasting solutions to global problems in areas such as health care, energy and the environment.

Alexander served as IEEE president in 1997 and is now a professor of electrical engineering at Cleveland State University. Watson is retired from Ohio Edison and is a career management consultant.

Before dinner, the banquet guests viewed history displays and science fair projects.

During the awards ceremony, volunteers who made significant contributions to the success of the sections, chapters and affinity groups during 2008 were recognized.

Recipients of scholarships from the High School Science & Technology Scholarship Poster Contest were announced, and the first place winners from regional high school science fairs received awards.

Two newly-elected IEEE Fellows, Dennis Brian Brown and Dr. John C. Zolper, attended the banquet and were recognized for their professional achievements (see p. 1).

Banquet sponsors BAE Systems and the National Capital Area Consultants' Network helped make the festive evening possible.

Northern Virginia Section Awards

- Outstanding Leadership Award** – Syed F. Ahmed for distinguished service and leadership as the 2008 Chair of the IEEE Northern Virginia Section
- Administrative Award** – Monica Mallini, 2008 Vice Chair
- Administrative Award** – Kerry Hartman, 2008 Treasurer
- Administrative Award** – Chuck Baldi, 2008 Secretary
- Outstanding Chapter Award** – Control Systems Society, with Vinod Mishra accepting the award
- Volunteer of the Year** – Monica A. Mallini, for her distinguished service to the Northern Virginia Section

- Distinguished Service Award** – Frederick A. Pearson, Industry Applications Society Chair, for sustained effort and initiative in providing excellent program arrangements
- Distinguished Service Award** – Jeffrey A. McWhirt, Power and Energy Society Chair, for sustained effort and initiative in providing excellent program arrangements
- Sustaining Friend of IEEE Northern Virginia Section** – BAE Systems
- Sustaining Friend of IEEE Northern Virginia Section** – E.K. Fox & Associates, with Oscar M. Reyes accepting the award
- Sustaining Friend of IEEE Northern Virginia Section** – Virginia Tech Advanced Research Institute, with Manissa Pipattanasomporn accepting the award
- Sustaining Friend of IEEE Northern Virginia Section** – Integrity Applications, Inc., with Steve Wear accepting the award
- Communications Society Chapter Chair** – Vinod Mishra
- Control Systems Society Chapter Chair** – Seddik Benhamida
- Education Society Chapter Chair** – Jennifer Polack-Wahl
- Signal Processing Society Chapter Chair** – Timothy Settle
- DeVry University Student Branch President** – Justin Derickson
- George Mason University Student Branch President** – Brigette Grubbs
- First Place, Fairfax County Regional Science and Engineering Fair** – Elizabeth Mako for "Switching Lifetime & Cost of CFL vs. Incandescents."
- First Place, Loudoun County Regional Science and Engineering Fair** – Jonathan Weller for "The Development of a Wide-View Head Tracking Program via Stitching Two Webcam Images"
- First Place, Northern Virginia Regional Science and Engineering Fair** – Timothy Bennett for "Obtaining Optimal Efficiency from a Thompson Coil Electromagnetic Mass Accelerator"



First Place, Prince William–Manassas Regional Science Fair – Patrick Wilshere for “2015 ‘Where We’re Going We Won’t Need Roads’”

Washington Section Awards

Outstanding Leadership Award – Gerard J. Christman for distinguished service and leadership as the 2008 Chair of the Washington Section

Administrative Award – Tim Weil, 2008 Vice Chair

Administrative Award – Raj Madhavan, 2008 Treasurer

Administrative Award – Katie B. Schaffold, 2008 Secretary

Volunteer of the Year – Raj Madhavan for his leadership in organizing robotics competitions and the PerMIS’08 Workshop, and chairing the Robotics and Automation Society chapter

Distinguished Service Award – Amarjeet S. Basra for his leadership in pre-college education

Distinguished Service Award – Paul Hazan for his leadership in sponsoring the STARS Science Fairs Program

Distinguished Service Award – Walter H. Lee, Jr. for his leadership in starting the Professional Communication Society chapter, supporting Sections Congress, and planning continuing education programs

Distinguished Service Award – Stanley Onye, for his leadership in sponsoring the Future City Competition

Sustained Superior Performance Award – Debi Siering, for outstanding contributions to the Section, Communications Society, and Women in Engineering

Sustaining Friend of Washington Section – University of Maryland, with Eyad Abed accepting the award

Delegate to District of Columbia Council of Engineering and Architectural Societies – James Christian

Delegate to Washington Academy of Sciences – Haik Biglari

PACE Chair – Haik Biglari

Communications Society Chapter Chair – Roger Hardwicke

Control Systems Society Chapter Chair – Haik Biglari

Education Society Chapter Chair – Charles Kim

Signal Processing Society Chapter Chair – Min Wu

Electromagnetic Compatibility Society Southern Maryland Chapter Chair – Fred Heather

Capitol College Student Branch – Daniel Turner, President;

Charles Conner, Faculty Advisor; Jerry Gibbon, Section Liaison

Catholic University of America Student Branch – Vincent

J. Curuso, President; Scott Mathews, Faculty Advisor;

Ron Ticker, Section Liaison

George Washington University Student Branch – Pavan

Luckoor, President; Nicholas Kyriakopoulos, Faculty Advisor;

Tim Weil, Section Liaison

Hood College Student Branch – George Dimitoglou, Faculty Advisor; Haik Biglari, Section Liaison

Howard University Student Branch – Peter Ramsumair, President; Charles Kim, Faculty Advisor and Section Liaison

Montgomery College Student Branch – Frange Abaraka, President; Uche Abanulo, Faculty Advisor; Tim Weil, Section Liaison

University of the District of Columbia Student Branch – Fatou Mbengue, President; Wagdy Mahmoud, Faculty Advisor; Paul Cotae, Section Liaison

University of Maryland College Park Student Branch – Jeremiah Tsang, President; William Levine and Romel Gomez, Faculty Advisors; Harry Sauberman, Section Liaison

Joint Awards

Distinguished Service Award – Doug Holly for his dedicated service in managing officer training.

Distinguished Leadership Award – Murty Polavarapu, for outstanding leadership as IEEE Region 2 South Area Chair.

Outstanding Chapter of the National Capital Area – Computer Society, with Tom Starai accepting the award.

Scanner Team – Pete Sypher, Elsie Grant, Chuck Baldi, Wally Lee, Rex Klopfenstein and Dave Booth

Aerospace and Electronic Systems Society Chapter Chair – Roger Oliva

Antennas and Propagation Society Chapter Chair – Monica Taysing-Lara

Computer Society Chapter Chair – Tom Starai

Electromagnetic Compatibility Society Chapter Chair – Greg Snyder

Electron Devices Society Chapter Chair – Dimitrios E. Ioannou

Engineering in Medicine and Biology Society Chapter Chair – Jeff Poston

Geoscience and Remote Sensing Society Chapter Chair – James Tilton

Industry Applications Society Chapter Chair – Fred Pearson

Information Theory Society Chapter Chair – James A. Christian

Lasers and Electro-Optics Society Chapter Chair – Mario Dagenais

Magnetics Society Chapter Chair – Can Korman

Microwave Theory and Techniques Society Chapter Chair – Bruce Levine

Nuclear and Plasma Sciences Society Chapter Chair – Harry R. Sauberman

Oceanic Engineering Society Chapter Chair – Michael Goldberg

Power and Energy Society Chapter Chair – Jeff McWhirt

Reliability Society Chapter Chair – Rakesh Chopra

Robotics and Automation Society Chapter Chair – Raj Madhavan

Society on Social Implications of Technology Chapter Chair – Chuck Sisung

Vehicular Technology Society Chapter and Land Transportation Committee Chair – Karl Berger

Technology Management Council Chapter Chair – Doug Holly

Life Members Chair – Amarjeet Basra

National Capital Area Consultants’ Network Chair – Monica A. Mallini

Women in Engineering Chair – Katie B. Schaffold

First Place, Virtual Manufacturing Automation Competition – Hood College Team of George Dimitoglou, George A. Henson and Michael J. Maynard

First Place, 2009 High School Science & Technology Scholarship Poster Contest – Curtis Kohl for “A New Encryption Approach”

Second Place, 2009 High School Science & Technology Scholarship Poster Contest – Timothy Bennett for “Obtaining Optimal Efficiency from a Thompson Coil Electromagnetic Mass Accelerator”

Third Place, 2009 High School Science & Technology Scholarship Poster Contest – Shaan Ahmed for “The Effects of Various Ions on the Acid Dissociation Constant of Weak Acid”

IEEE Expert Now Training Team – Michael Cardinale, Katie B. Schaffold, Timothy F. Settle, Monica Taysing-Lara and Barry C. Tilton

NCA Consultants’ Network Awards – Robert L. Miller, Mark E. Pittelkau and Charles J. Lord

Special Awards

James F. Strother Meritorious Service Award – Michael A. Cardinale for his leadership and dedication to IEEE, Region 2 and the Northern Virginia Section

John Margosian Meritorious Service Award – Harry S. Sauberman for outstanding leadership and dedicated service to the Washington Section and National Capital Area

IEEE Friend of MGA – MITRE Corporation, in recognition of its support to the Northern Virginia Section by providing meeting space over a long period of time, with Jeff Poston accepting the award

5—(opposite page) Murty Polavarapu presents plaques to keynote speakers Dr. Charles Alexander and James Watson.

6—William P. Walsh presents the James F. Strother Meritorious Service Award to Michael Cardinale, who chaired the Northern Virginia Section in 2002 and 2006.

7—Gerard Christman presents the John Margosian Meritorious Service award to Harry Sauberman, Chair of the Nuclear and Plasma Sciences Society Chapter and Section Liaison to the University of Maryland. (Photo by Tim Weil.)

8—Murty Polavarapu presents the Northern Virginia Section’s Volunteer of the Year award to Monica Mallini, 2009 Section Chair and NCA Consultants’ Network Chair.

9—Gerard Christman presents the Washington Section’s Volunteer of the Year award to Raj Madhavan, Chair of the Robotics and Automation Society Chapter.



Alternative Energy Debate, Ways to Energize Members are Themes of IEEE-USA Annual Meeting

By Fred Rosenberger

Although the central theme for this year's IEEE-USA Annual Meeting in late February was "Engineering the Alternative Energy Debate," permeating every aspect of the meeting was bettering IEEE and its members, whether that means applying IEEE members to solving a critical national issue (energy sustainability), building IEEE membership (recruitment and retention), or developing IEEE members (career development and opportunities). The meeting imbued its attendees with a sense of empowerment for the future and gave them tools to bring these aspects to fulfillment. During my brief time at the IEEE-USA meeting, I gained a deeper understanding of each these areas and how I can contribute to IEEE.

Alternative Energy

Regarding the alternative energy debate, sustainable development is a topic of personal interest. While I consider myself well-versed on the subject, my knowledge of the current state of technology and operations of the U.S. energy infrastructure was relatively minimal. In view of this, the IEEE-USA meeting's focus on alternative energy was very much welcome.

Richard Walje gave an enlightening presentation on the state of electrical power production in the western half of the U.S., in general, and for Rocky Mountain Power, in particular. Walje also gave a frank assessment of future energy demands and how Rocky Mountain Power is trying to address them. Governor Jon Huntsman expanded upon Walje's presentation and identified what the state of Utah is doing to become a leader in the energy realm.

Presentations by Dr. Leonard Bond

and James Woolsey addressed unique perspectives on the threats to our energy system. In particular, Dr. Bond commented on the potentially disastrous effect our education system could have on future energy stability—a need exists for engineers and other energy workers that neither I nor many people in the audience fully appreciated prior to his presentation.

From the vantage point of national security, Woolsey postulated on the problems and solutions to our energy dependence. While even the layperson is aware of the terror threats to our energy infrastructure, Woolsey's discussion brought to light the disastrous implications to our economy and way of life if measures are not taken to defend our energy infrastructure and to cure our energy dependence.

Other presentations provided details of technology, research efforts, lobbying, and local projects by IEEE members that address the goal of a sustainable energy system. The combination of presentations by representatives from research, commerce and government sectors gave attendees a variety of perspectives on a complex political, technical and commercial issue.

Networking

Unlike other technical conferences, the IEEE-USA Annual Meeting combines technical presentations and discussions with networking and social development opportunities. Attending a conference when you know only a couple people from a rather brief interaction a few weeks before can be daunting for anyone. Such was my scenario. However, the welcoming nature of IEEE-USA made such a prospect less stressful. Members look at the annual

meeting as a chance to engage, interact, and learn from each other. In short, attendees are really networkers.

While talking to strangers in such an environment can be intimidating, it provides a great learning experience for most engineers and provides a valuable skill applicable to both professional and social development. To that end, my networking abilities were enhanced by attending the meeting. Despite my hesitancy at first, I was privileged to make some great friends and contacts within a short time of my arrival in Salt Lake City. And by the end of my stay, I had learned to be a better networker, which will help me in both my career and my future volunteering with IEEE.

The PACE Secret

Besides networking, the other advantage to attending the IEEE-USA meeting is learning about the IEEE entity and how to make it work for its members. After hearing PACE used repeatedly at various times during my IEEE membership, the secret of the acronym was finally revealed (it stands for Professional Activities Committee for Engineers). More importantly, I was educated on what PACE is and how it can be used to fully develop us into well-rounded engineers of the future.

To create an IEEE of the future, I learned about concepts and ideas on how to recruit and retain members. I also brainstormed with newly met colleagues over dinner on why maintaining a membership in IEEE isn't necessarily viewed by engineers the same way a lawyer views the American Bar Association or a doctor views the American Medical Association—is it because of the required licensing aspect of those professions?

A very well taught seminar covered the fundamentals of influencing people, even when you're not in charge. Moreover, several presenters spoke of how IEEE afforded them career enhancement opportunities that they would otherwise not have had. To those who view IEEE membership as having only technical advantages, this was an enlightening discussion. For example, without the repercussions of losing their livelihood, IEEE volunteers can gain a knowledge and understanding of the rigors of project management that only hands-on experience offers. Thus, one could enhance a résumé by promoting IEEE and its associated programs—and have a fun time doing it.

At the very least, all attendees left the conference with a greater sense of community. From the early morning breakfasts to the IEEE-USA Awards Banquet, everyone was there to make IEEE and its members better. At the end of it all, I learned that IEEE is better because of its members. And I walked away better because of it.

GOLD Promotion

With any subset of a membership group, increasing participation is achieved by promoting programs of interest to that particular segment. Given that my membership in Graduates of the Last Decade (GOLD) will be expiring this year, my contribution on how to inspire and communicate with GOLD members is marginal, at best.

However, social networking is a phenomenon among the up and coming generations. IEEE, both nationally and locally, should use social networking tools, such as Facebook, MySpace, Twitter, LinkedIn, etc., to connect with, recruit, and retain members. Local college student branches especially should be engaged in this, as their familiarity with and use of these technologies is typically greater than that of the general engineering populace.

Moreover, IEEE should sponsor purely social programs at the local level for GOLD members. These programs may be designed to have a marginal technical or career development aspect, instead focusing on initiating camaraderie among program attendees that could foster future involvement. If younger members view IEEE as an organization where they can meet and socialize with friends (with the added benefit of professional association and career development), then it will be easier to inspire GOLD members to be active in IEEE. Ideally, events would be promoted through social networking venues (as discussed briefly above) rather than IEEE listserves (which often get overlooked with busy schedules and email-heavy inboxes). Word of mouth at local organizations and companies through personal interactions with current IEEE members, who are actively or partially involved in volunteering, could also increase participation.

Activities might include a discounted group night at a sporting event, local happy hours, beer pub or coffee-house discussions, movie nights, outdoor sports events, basketball leagues, etc. For example, an activity that was considered for a patent attorney (non-IEEE) group was a viewing party for the movie, *Flash of Genius*, about an infamous patent case. This activity had a very low technical threshold but a high social threshold, which encouraged interaction and development of friendships. When GOLD members view IEEE as their "friends and family," active participation will come naturally.

Fred Rosenberger is a Registered Patent Agent with Miles & Stockbridge, PC. He represented the IEEE Northern Virginia Section's GOLD chapter at the IEEE-USA meeting. He joined IEEE in 1999, the year he graduated from the University of Maryland.

Learn more,
Go further. It's that simple!

WORLD-CLASS ENGINEERING EDUCATION
IS AVAILABLE NEAR YOU!

LIFELONG LEARNING

Professional Master of Engineering
Graduate Certificate in Engineering

- upgrade/broaden your skill set
- stay competitive
- take classes at regional sites or online
- practice-oriented for working professionals
- renowned full-time and experienced adjunct faculty

APPLY TODAY

- No GRE Exams
- No Thesis to Complete
- Classes Fit Your Schedule

DEADLINES

- May 15 - Summer
- Aug 1 - Fall
- Dec 15 - Spring

ENGINEERING OPTIONS

chemical and biomolecular
electrical and computer
civil and environmental
project management*
energetic concepts*
materials science
fire protection*
environmental
mechanical
reliability*
aerospace
software
systems
nuclear
(* also available online)



UNIVERSITY OF
MARYLAND
A. JAMES CLARK
SCHOOL OF ENGINEERING

For more information go to - WWW.OAEE.UMD.EDU/IEEE.HTML

Answer to Probability Density Problem: $f(x) = \delta(x - 3)$.
(Impulse function located at $x=3$.)

'IEEE Engineering the Future Day' Receives Congressional Support

The U.S. House of Representatives passed a resolution supporting the goals and ideals of "IEEE Engineering the Future Day," which IEEE celebrated on May 13 in recognition of its 125th anniversary.

House Resolution 413, which passed 409-0, was introduced by Rep. Cliff Stearns (R-Fla.). Bart Gordon (D-Tenn.), chairman of the House Science and Technology Committee, was the lead cosponsor.

Stearns was a student member of IEEE while earning his degree in electrical engineering from George Washington University.

"I was an aerospace engineer in the Air Force, a captain in the Air Force during [the] launching of satellites from Vandenberg Air Force Base," Stearns said on the House floor. "I'm very proud of the background I have. It sometimes helps me in trying to understand the intricacies in analysis here in Congress."

Gordon discussed some of the myriad accomplishments of IEEE members. "Who could imagine the world today without electricity, light bulbs, computers, radios, TVs, wireless communications, the Internet and all those electronic devices that inform us, entertain us and help make our lives more enjoyable?" Gordon said.

"Health care has improved because we have x-rays, MRIs, laser surgery, sonograms, arthroscopic cameras and pacemakers," he said. "We can thank electrical and computer engineers for these lifesaving technologies."

IEEE Engineering the Future

Day, which fell on IEEE's official anniversary date, recognized the contributions and impact that IEEE members and engineering and technology professionals have made for the benefit of humanity.

IEEE traces its beginning to the founding of the American Institute of Electrical Engineers (AIEE) on May 13, 1884. AIEE merged with the Institute of Radio Engineers in 1963 to form IEEE.

The House resolution recognizes IEEE for many contributions, including, among others, its "vast library of technical publications," worldwide conferences, "international standards that support many of today's products and services," and for providing "learning opportunities within the engineering sciences."

The resolution concludes by saying the "United States must continue its efforts to maintain its leadership in science, technology, and innovation: Now, therefore, be it Resolved, That the House of Representatives (1) recognizes the importance of engineering and technology to meeting our Nation's most pressing challenges; (2) congratulates IEEE on its 125th anniversary; and (3) supports the goals and ideals of IEEE Engineering the Future Day."

To read the entire resolution, go to <http://thomas.loc.gov> and enter "413" in the Search box, then select the appropriate result.

You can find out more about IEEE 125th anniversary activities at www.ieee125.org.

William H. "Hank" Carter (1938-2009)

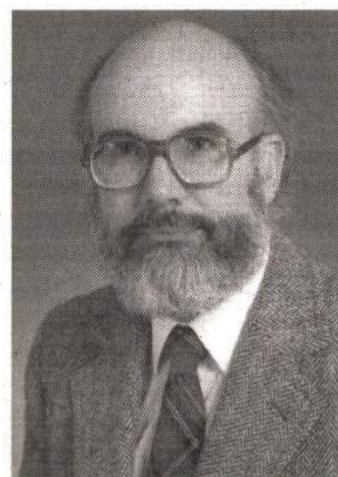
William Harold Carter, 70, was a research physicist and engineer, spending most of his career with the Naval Research Laboratory where he conducted independent basic research in optics, concentrating on the statistical properties of light.

He lived in the Mt. Vernon area of Fairfax County. He died March 20 of pulmonary fibrosis. Born in Houston in 1938, he earned B.S.E.E., M.S.E.E., and Ph.D. degrees from the University of Texas in 1961, 1963, and 1966, respectively. As part of his graduate work, he designed and built one of the first lasers in Texas.

Building on this foundation, he conducted research on the nature of laser light, holography, digital image processing and analysis, and was a co-discoverer of the quasi-homogeneous source model with the physicist Emil Wolf, while he was a research associate doing postgraduate study at the University of Rochester in the late 1960s. [Emil Wolf co-authored the classic textbook, *Principles of Optics*.]

In time, this general area of research, to which Dr. Carter contributed, evolved and facilitated the development of practical military and civilian applications. A seminal paper on the quasi-homogeneous source resulted in his being one of the most cited authors at the NRL.

Besides his NRL work, Dr. Carter was a professorial lecturer in electrical engineering at George Washington University, and was a visiting research fellow at the University of Reading, England (1976-1977), professor of EE



Dr. Carter

and graduate school fellow at the University of Nebraska (1981-1982), lecturer in EE at Johns Hopkins University (1989-1995), and visiting scientist at the Applied Physics Laboratory (1991-1992).

He was Program Director for Quantum Electronics, Waves, and Beams at the National Science Foundation, 1993-1994.

During Army service in the late 1960s, he was assigned to the CIA's office of research and development.

Besides senior membership in IEEE, Dr. Carter was a Fellow of the Optical Society of America and of the SPIE-International Society for Optical Engineering and was editor of the *Journal of the Optical Society of America*. He was a member of Tau Beta Pi and Eta Kappa Nu.

He played cello with the Alexandria Symphony and other orchestras and chamber groups. His memberships included the Cosmos Club and Potomac Appalachian Trail Club. He had a pilot's license.

His marriage to Lynda Lee Craft ended in divorce. Survivors include his son William H. Carter Jr. of Littleton, Colorado, a daughter Elizabeth L. Carter of Yoakum, Texas, a brother, James, of Tempe, Arizona; two grandchildren, and his long-time companion, Linda Demlo.

Compiled by Pete Sypher, Scanner Editor from a Washington Post obituary and material from Linda Demlo.

Washington Section Members Talk to Policy Makers

CAPITOL HILL, from p. 1

clude global environmental monitoring, lasers, liquid crystal displays, and the Internet, among many other scientific and technical advances.

The federal government supports a unique research and education enterprise that fuels the American economy. This enterprise provides the underpinning of high-technology industries and expands the frontiers of knowledge in every field of science.

Much of this research is carried out at academic institutions across the country, ensuring knowledge transfer to future generations of scientists, engineers, mathematicians, physicians and teachers.

Additionally, technology transfer from academic research adds billions of dollars to the economy each year and supports tens of thousands of jobs.

Highlights of the two-day event in-

cluded a series of briefings and talks by members of Congress and executive branch officials including Chuck Atkins, Staff Director, U.S. House Science and Technology Committee; Kei Koizumi, Assistant Director for Federal R&D at the White House Office of Science and Technology Policy; and Jason Freihage, Budget Analyst for the House Budget Committee.

Our committee also met with Rep. Roscoe Bartlett, staff members of Rep. Steny Hoyer and Rep. Chris Van Hollen, and legislative assistants to Senators Ben Cardin and Barbara Mikulski, all from Maryland.

Also, there was a presentation of the George E. Brown Award for outstanding leadership in support of Federal R&D to Rep. David Obey of Wisconsin, the chairman of the House Appropriations Committee. He was recognized for his outstanding efforts to advance

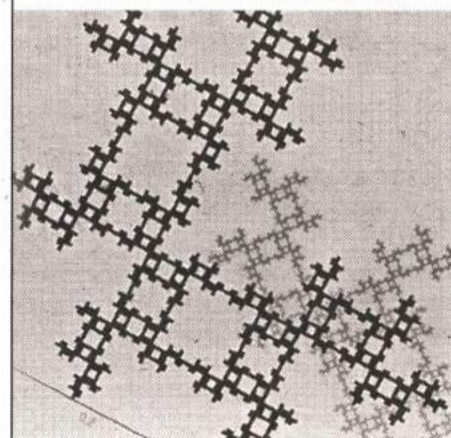
and promote science, engineering and technology on Capitol Hill. The attendees from all over the country then made hundreds of visits to their Senators and Representatives.

The Science-Engineering-Technology Work Group is an information network comprising professional, scientific and engineering societies, institutions of higher learning, and trade associations. The sponsors represent more than one million researchers and professionals in science and engineering. The Work Group is concerned about the future vitality of the U.S. science, mathematics and engineering enterprise.

IEEE-USA coordinates the participation of IEEE members in Congressional Visits Day each year. Additional information about the 2009 Congressional Visits Day can be found at www.setcvd.org.

Norbert Wiener Center

Advanced mathematical toolsets give the edge in creating tomorrow's technologies.



UNIVERSITY OF MARYLAND

Data Mining
Bioinformatics
Nanotechnology
Waveform Design
Σ-A Quantization

Evening Classes! Signal and Image Processing
Communications and Sensors
Statistical Pattern Recognition
Medical Imaging and Diagnostics
Time-Frequency and Wavelet Methods
Quantum Information, Detection, and Computation

Mathematics of Advanced Industrial Technology
Master Degree and Graduate Certificates

www.mait.umd.edu Phone: 301-405-5158

Members Reminisce at 125th Anniversary Celebration

At a joint meeting on May 13, the Northern Virginia and Washington Sections marked the official date of IEEE's 125th Anniversary with a series of presentations, discussions and exhibits focusing on the history of the sections.

The anniversary celebration meeting was moderated by Dr. Paul Cotae, a Director of the Washington Section and Professor at the University of the District of Columbia. He noted the historical significance of the occasion, then introduced each speaker and moderated lively discussions after each talk.

Russ Harrison, IEEE-USA's Senior Legislative Representative for Grassroots Activities, gave an overview of IEEE-USA and its many programs and activities.

Dr. Haik Biglari, P.E., described his experiences at the recent Congressional Visits Day (see p. 1), and displayed the proclamation that was read in Congress to recognize IEEE's anniversary (see p. 7).

Dr. Frederica Darema gave an abbreviated version of her keynote presentation for the IEEE National Capital Area Awards Banquet on May 2 (see p. 4).

Tim Weil, Washington Section Chair, discussed the early history of the Section and displayed a poster he created with historical photos from the first 50 years, when the section was a branch of the American Institute of Electrical Engineers (see photo, p. 4). He also discussed the use of the Global History Network for putting the Section history online, and the need to create a digital archive of historical documents.

Dr. Saj Durrani, who joined the Washington Section in 1968 and served as its chair in 1980-81, reviewed some of the section's activities and accomplishments of members during the last 40 years. He told about establishing the Professional Activities Pilot Experiment (PAPE) in response to massive lay-

offs of engineers at the end of the Apollo Program in the 1970s. In spite of initial opposition by some IEEE technical societies, PAPE's recommendations were ultimately accepted by the IEEE Board and led to the formation of the unit that became IEEE-USA. (See "Snippets of the Last 40 Years" in the May–June issue of the *Scanner*.)

Monica Mallini, Northern Virginia Section Chair gave a presentation on the history of the *Scanner*, which replaced two separate newsletters in September 1983 and has been published jointly by the two sections since then. Mallini has been delving into the *Scanner* archives to prepare a paper for the 2009 IEEE Conference on the History of Technical Societies, which will be held in Philadelphia in August (see Calendar, p. 3).

She commented that the most interesting aspect of studying IEEE history through newsletters is making connections across time and space with people that one knows in another context. For example, she has known Dr. Fred I. Denny, who is active in the IEEE Beaumont Section and the Power and Energy Society, for as many years as she has been an IEEE volunteer, but she had no idea that he was from the Washington area until she read in an old *Scanner* about his attendance an awards banquet in 1989 when he was elected Fellow.

Mallini also unveiled the IEEE National Capital Area Time Capsule. Items will be collected for several months to fill the capsule, which is 24" long and 6" in diameter. Ideas are welcome, and suggestions are also being solicited for a location for the capsule during its 25-year storage, perhaps a corporate or institutional environment where it can be displayed permanently.

The evening included an 'open mic' for the audience to discuss topics such as the Institute of Radio Engineers, the George E. Brown Jr. Leadership Award for Contributions to Science, and methods of archiving historical documents.

At the end of the evening, everyone agreed that it had been far too long since the Washington and Northern Virginia Sections held a joint meeting, and that it should be an annual event.

The IEEE Sections appreciate the assistance of Virginia Tech Advanced Research Institute staff, especially Robert Brown and Dr. Saifur Rahman, for providing the hosting facility and support for the 125th anniversary program.

BIGLARI, from p. 1

talizing the Washington chapter of the IEEE Control Systems Society.

Primary activities of DCCEAS are technical education, community leadership, and National Engineers Week. The council is composed of 36 technical societies, including the IEEE Northern Virginia and Washington Sections. Some of the member societies are chapters of international or national professional societies, while others are local organizations.

Antenna Colloquium Offers Early Registration Savings

Advances in Antenna Test and Measurement Techniques, a September colloquium cosponsored by several IEEE technical society chapters, has an early registration deadline of July 15. IEEE members who register early will enjoy a \$50 savings.

Session topics include test zone performance improvement in anechoic chambers, measurement speed improvements based on receiver architecture and firmware implementation, an open boundary quadridge horn antenna for the 80 MHz to 1 GHz range, sub-millimeter wave planar near-field antenna testing, novel antenna pattern imaging techniques using infrared technology, and MIL-STD testing.

The one-day meeting will be held at the Four Points by Sheraton BWI Airport Hotel, Baltimore, MD. For more information, see www.amta.org or www.ieee.org/escanner.

GRADUATE DEGREE &
CERTIFICATE PROGRAMS
GW VIRGINIA CAMPUS – LOUDOUN

ELECTRICAL ENGINEERING (MSEE) & TELECOMMUNICATIONS AND COMPUTERS (MS)

Advance your career.

Earn your 30 credit Master's or 12-18 credit Graduate Certificate. All powerful credentials for today's engineers.

Make an impact.

Engineering professionals provide the technical foundation for the modern information society and draw from several disciplines to provide innovative solutions.

Convenient schedules.

Choose from Saturday-only or weeknight classes — both at the GW Virginia Campus in Ashburn. Complete your degree in as few as 19 months, or your graduate certificate in even less.

MSEE Focus Areas/ Graduate Certificates:

- Telecommunications Networks
- Telecommunications Security and Electronic Warfare
- Wireless and Mobile Networks

Information Session

Thursday, Sept. 10
6:30 pm
GW Virginia Campus
20101 Academic Way
Ashburn, VA 20147

Rsvp Today!

703.248.2800
www.nearyou.gwu.edu/ece

WWW.POWERMEMS.ORG

POWERMEMS 2009

THE 9TH INTERNATIONAL WORKSHOP ON MICRO AND NANOTECHNOLOGY FOR POWER GENERATION AND ENERGY CONVERSION APPLICATIONS

WASHINGTON DC, USA DECEMBER 1-4, 2009

CALL FOR PAPERS

TECHNICAL TOPICS OF INTEREST

- ▶ Energy scavenging for remote sensors and microsystems
- ▶ Thermoelectric and photovoltaic materials and systems
- ▶ Piezoelectric, electrostatic and electromagnetic conversion
- ▶ Energy management and microsystem integration
- ▶ Nanostructured materials for energy and thermal management
- ▶ Micro fuel cells and micro reactors for fuel processing
- ▶ Micro/nano catalysis, combustion, heat and mass transfer
- ▶ Micro thrusters and miniature propulsion microsystems
- ▶ Biologically-inspired energy conversion and cooling
- ▶ Micro heat engines for power generation and propulsion
- ▶ Micro and nanofabrication for energy applications
- ▶ Micro coolers and other thermal management technologies

DEADLINES

ABSTRACT SUBMISSION
JUL 10, 2009

AUTHOR NOTIFICATION
AUG 14, 2009

FINAL PAPERS DUE
SEP 25, 2009

EARLY REGISTRATION
SEP 25, 2009

CONTRIBUTOR SUPPORT OPPORTUNITIES AVAILABLE

Organized by: Ben
Rao Choudh, Ph.D., University of Maryland
Carel Livermore, Ph.D., Massachusetts Institute of Technology
David Arnold, Ph.D., University of Florida

THE GEORGE
WASHINGTON
UNIVERSITY
VIRGINIA CAMPUS

BRING US YOUR AMBITION.

www.gwu.edu/gradinfo

34136 THE GEORGE WASHINGTON UNIVERSITY IS AN EQUAL OPPORTUNITY/ AFFIRMATIVE ACTION INSTITUTION CERTIFIED TO OPERATE IN VA BY SCHEV.