



Message to the Future—A guest at the IEEE National Capital Area Awards Banquet on May 1 signs a scroll to commemorate the 125th Anniversary of IEEE in 2009. After the banquet, the scroll and the items in protective pouches were sealed in the time capsule (right). The capsule will be placed in an IEEE display at the University of the District of Columbia. (Photo by Khanh Luu)

IEEE Ballot Includes Local Candidates

Three local members are on the IEEE election ballot this year. Marc Apter of the Northern Virginia Section is running for IEEE-USA President-Elect and Murty Polavarapu of Northern Virginia is a candidate for Region 2 Director-Elect. Saifur Rahman, also of the Northern Virginia Section, is vying for Division VII Director-Elect.

The other candidates for these positions are James M. Howard for IEEE-USA President-Elect; Parviz Famouri of the Pittsburgh Section for Region 2 Director-Elect; and Cheryl (Cheri) A. Warren and Mohamed E. El-Hawary for Division VII Director-Elect.

Candidates' bios and position statements for the IEEE-USA

and Region 2 elections appear on pages 4-5.

Ballots will be sent to all voting members by August 1 and need to be received by IEEE by 12:00 noon Central Daylight Time on October 1. Instructions for voting online will be included with the ballots. Electronic access to the ballot package will also be available on August 1.

Region 2 of IEEE includes the Washington and Northern Virginia Sections and 18 other sections in Delaware, Maryland, southern New Jersey, Ohio, Pennsylvania, and West Virginia. Division VII includes the Power and Energy Society.

For more information about the IEEE elections, see www.ieee.org/elections.

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DCCEAS Names Guru Madhavan 'Young Engineer of the Year'

Guru Madhavan, PACE Chair and a Director of the IEEE Washington Section, has been recognized as the Young Engineer of the Year by the District of Columbia Council of Engineering and Architectural Societies (DCCEAS).

Dr. Madhavan, a biomedical engineer, is a program officer in policy and global affairs at the National Academy of Sciences.

At the annual DCCEAS banquet on February 27, Dr. Madhavan received the award for his contributions to biomedical engineering through research, public policy, career development activities, and continued service to IEEE.

IEEE is one of the member societies of DCCEAS, which is comprised of about 30 engineering, architectural, and other technical organizations in the Washington metropolitan area. DCCEAS helps advance the various constituent professions through public interest, scientific, and educational pursuits.

Robotics and Automation Chapter Recognized at Conference

By Leon A. Escobar-Moreira
Chair, Robotics and Automation Society

At the 2010 IEEE International Conference on Robotics and Automation (ICRA2010), the Washington and Northern Virginia Chapter of the Robotics and Automation Society received worldwide recognition as the IEEE-RAS Chapter of the Year.

The conference, held in Anchorage, Alaska on May 3-8, celebrated "50 Years of Robotics" with the presence of important personalities, keynote speakers,

and more than 900 attendees who shared the latest achievements in the field and explored the broad impact of robotics and automation research, development, and education.

The Chapter of the Year award was presented at the ICRA2010 awards ceremony. It recognizes "the outstanding performance by a RAS Chapter in serving its members."

I was informed of the award in advance by award committee co-chairs, Dr. David Orin and Dr. Richard Volz. However,

Dr. Raj Madhavan, the founding chapter chair, had the pleasant surprise of learning about the award at the conference. On behalf of the chapter, he accepted the well-deserved award, which encompasses an economic prize as a stimulus to maintain the chapter activities.

Since its formation in 2007, the RAS chapter has worked tenaciously to reach out to professionals, academicians, students and others in robotics and au-

tomation, through the organization of events and technical meetings.

Chapter Vice Chair Robert Noteboom and Treasurer Paul Ferretti join me in inviting our society's members to celebrate and stay tuned for future guest speakers and events. These include the Third Autonomous Robotics Speedway Competition at the University of Maryland College Park, on Saturday, October 16.

Senior Members

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

Jeffrey Arndt (NV)	Dalton Rosario (W)
Joseph Brickey (NV)	Richard Schwartz (NV)
David Floyd (NV)	Nanthakumar
Madison Gray (W)	Thirunarayanan (W)
Don Gunasekara (NV)	Yunxia Tong (W)
Marc Imhoff (W)	Jonathon Todd Trivett (W)
Mark Lindsey (NV)	Min Wang (NV)
Brian Markwalter (NV)	Haiyong Xu (NV)
David McDysan (NV)	Nian Zhang (W)
Kamran Rahman (W)	

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 Murty Polavarapu at murtyp@ieee.org and Washington Section members may contact Harry Sauberman at hsauberman@ieee.org.



RAS Chapter of the Year—Dr. Kazuhiro Kosuge (left), President of the IEEE Robotics and Automation Society, presents the society's Chapter of the Year award to Dr. Raj Madhavan, who founded the Washington and Northern Virginia Chapter and chaired it from 2007 to 2009.

WASHINGTON SECTION

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*Washington, Northern Virginia, and
Baltimore Sections

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.ieeecommunities.org/ncac.

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

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Women in Engineering (W/NV)

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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, 2010

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calendar of events

Saturday, July 3, 2010

Computer Society Virtual Meeting

Sponsor: Computer Society
Time: Sound checks & socializing 11:00 am; presentation & discussion 12:00–1:00 pm
Place: IEEE Island 2, TCDL classroom, Second Life (www.secondlife.com)
More Info: The Computer Society holds monthly meetings on first Saturdays in the Second Life virtual community. Meeting topics may be administrative, social or technical. To participate, you must create a Second Life avatar. For a description of how to join the meetings, see the Second Life page on the Computer Society's website at http://ewh.ieee.org/r2/wash_nova/computer/cms/.
Contact: Tom Starai at starai@ieee.org.

Thursday, July 8, 2010

◆ Trends in the Telecommunications Industry

Sponsor: Communications Society (Washington Chapter)
Cosponsors: Computer Society, Engineering in Medicine and Biology Society, Microwave Theory and Techniques Society
Speaker: Celia Desmond, President, World Class Telecommunications
Time: Refreshments and networking 6:30 pm, presentation 7:00 pm
Place: MITRE Corp., Building 2, Conference Room 1N100, 7515 Colshire Drive, McLean, VA
Directions: See www.mitre.org/about/locations/va-mclean_mitre2.html. Free parking.
More Info: See Diamond story, p. 8.
Contact: Please RSVP by Tuesday, July 6 to Debi Siering at siering@ieee.org.

Wednesday, July 14, 2010

Northern Virginia Section Administrative Committee Meeting

Time: 6:00–8:00 pm
Place: Olive Garden Restaurant, 8133 Leesburg Pike (Tysons Corner), Vienna, VA
Directions: From I-495, take Route 7 West (Exit 47A) toward Tysons Corner. Turn left at Gallows Road. Parking garage is behind the restaurant.
More Info: All interested IEEE members are invited to attend.
Contact: Please send reports and agenda items to Dan Cross-Cole at dcrosscole@devry.edu by 12:00 noon on July 13, or contact him at 703-527-8072.

Tuesday, July 20, 2010

◆ Ultra-Wideband and Interleaved Polyfractal Antenna Arrays

Sponsor: Antennas and Propagation Society
Speaker: Joshua Petko, Northrop Grumman

Time: 5:00–7:00 pm
Place: Johns Hopkins University Applied Physics Laboratory, Howard Room, 11100 Johns Hopkins Rd., Laurel, MD
More Info: See Diamond story, p. 8.
Contact: Brian Riely at brian.riely@ieee.org.

Tuesday, July 27, 2010

The Physics of Non-Physical Systems

Sponsors: Computer Society, American Society for Quality (ASQ) Section 509 Software SIG, Society for Software Quality (SSQ)
Speaker: Jeffrey Voas, National Institute of Standards and Technology
Time: Networking & pizza 6:30 pm; program 7:00–8:00 pm
Place: Videoconference with two local sites:
 MITRE Corp., Building 2, Conference Room 1N100, 7515 Colshire Drive, McLean, VA
 FDA, Bldg. 66, Room G512, 10903 New Hampshire Ave., Silver Spring, MD
More Info: All interested IEEE members and guests are invited. Pizza and soda will be provided. If you cannot attend at either location, select telephone dial-in when you register and provide your Skype user ID.
Contact: Advance registration required by 12:00 noon on Monday, July 26 at www.asq509.org/ht/d/DoSurvey/i/26913. If your plans change, please email ankums@mitre.org to cancel your reservation.
 To RSVP for FDA (Silver Spring), please indicate citizenship. If not a U.S. citizen, please provide your job title, employer, and address. Allow two business days for registration before the meeting.

Tuesday, August 3, 2010

Washington Section Administrative Committee Meeting

Time: 6:45 pm
Place: American Association for the Advancement of Science (AAAS), 1200 New York Avenue NW, Washington, DC
Directions: Use the 12th Street entrance. The AAAS building is one block from Metro Center (Red, Orange and Blue lines). Street parking is free after 6:30 pm (no parking 4:00–6:30 pm). There is a pay parking lot at the intersection of 9th St. and New York Ave., and a parking garage at 14th St. and New York Ave.
 See map at www.aaas.org/dcwest.pdf.
More Info: All interested IEEE members are welcome. A video link is available at www.ieee.org/washsec/video1.html.
Contact: Please register at http://meetings.vtools.ieee.org/meeting_view/list_meeting/2695. For questions, contact Monica Taysing-Lara at m.taysinglara@ieee.org or 202-725-2225.

Saturday, August 7, 2010

Computer Society Virtual Meeting

Sponsor: Computer Society
Time: Sound checks & socializing 11:00 am; presentation & discussion 12:00–1:00 pm
Place: IEEE Island 2, TCDL classroom, Second Life (www.secondlife.com)
More Info: For a description of how to join the meeting, see the Second Life page on the Computer Society's website at http://ewh.ieee.org/r2/wash_nova/computer/cms/.
Contact: Tom Starai at starai@ieee.org.

Tuesday, August 10, 2010

Net SILO: Architectural Support for Internet Evolution and Innovation

Sponsor: Communications Society (Washington chapter)
Cosponsors: Computer Society, Engineering in Medicine and Biology Society, Microwave Theory and Techniques Society, Robotics and Automation Society
Speaker: Dr. George Rousakas, North Carolina State University
Time: Refreshments and networking 6:30 pm, presentation 7:00 pm
Place: DRS Technologies Company, 400 Professional Dr., Suite 400, Gaithersburg, MD
Contact: RSVP required by Friday, August 6. Please include name and citizenship. Non-citizens must also provide company name, company address, telephone, passport number with expiration date and title. Photo ID required to enter facility.

Saturday, August 14, 2010

Consultants' Network Picnic

Sponsors: National Capital Area Consultants' Network, Professional Communication Society
Time: 12:00 noon to 3:00 pm
Place: Lake Fairfax Park, Reston, VA
Directions: From the Beltway, take exit 47A (Route 7, Leesburg Pike) to Baron Cameron Avenue. Turn left on Baron Cameron Avenue and take the second left onto Lake Fairfax Drive. Follow the IEEE signs to the picnic. See www.co.fairfax.va.us/parks/maps/lakefairfaxmap.htm.
More Info: All members, guests and friends of IEEE National Capital Area Consultants' Network are cordially invited to our annual picnic. Bring business cards, games, side dishes or desserts, something to grill (if you wish), and your musical talents to share. **Do not bring pets or alcohol.** The Consultants' Network will provide ice, drinks, plates, charcoal, and hot dogs. We are expecting perfect weather, but if that is not the case, we will advise you of the rain date.
Contact: RSVP to Wally Lee at w.h.lee@ieee.org and include number of attendees.

See CALENDAR, p. 7

Candidates for IEEE-USA President-Elect

The following individuals are candidates for IEEE-USA President-Elect, 2011

Marc T. Apter

Senior Information Assurance Specialist
EG&G Technical Services
Dahlgren, Virginia

www.marcapter.com

Marc T. Apter received his BSEE (Electronics) Degree from The Pennsylvania State University (1964). He served in the U.S. Navy as Electronic Material Officer (EMO) aboard the USS BROOKE (DEG-1) and as EMO and Instructor at the Fleet Training Center, Mayport, Florida. He then worked for the U.S. Navy's Naval Sea Systems Command (NAVSEA), for 11 years, with the responsibility for installation of various electronic and other systems, followed by five years with the Chief of Naval Materiel, developing Electronic Maintenance Policy.

For the 15 years until he retired, he worked at NAVSEA again, first managing its Metrology and Calibration Program, then managing the Navy's Maintenance and Configuration Management Programs, and finally as the Command Information Systems Security Manager and Head of the Information Technology Operations and Maintenance Branch. He is currently a Senior Information Assurance Specialist for EG&G Technical Services, in Dahlgren, Virginia, developing security documentation for U.S. Government systems.



IEEE Accomplishments

What I have accomplished or helped accomplish during my years as an IEEE volunteer:

- IEEE-USA Critical Infrastructure Position Paper
- RAB/MGAB vTools efforts
- myIEEE
- IEEE.tv
- Helping lead SC 2002 & 2005, the two best Sections Congresses yet held
- The Changes/Simplification of the IEEE Membership application procedures
- Bringing new people forward as candidates for elected and appointed positions
- The Student Ethics Competitions
- Pre-University IEEE Clubs
- The formation of the Career Services Committee

- The BoD Blue Ribbon Committee in 2000's proposal for a Member Benefit Organization
- 1984 Chair USAB Environmental Quality Committee
- 1994 Chair USAB Ethics Committee
- First Chapters Chair of IEEE Social Implications of Technology Society in 1982-85
- First Professional Activities Chair of SSIT in 1982-85
- Northern Virginia/Baltimore/Washington SSIT Chapter Founding Chair in 1982-84

Statement

The IEEE-USA is our national professional organization, and it is a great organization. It has goals to be a greater organization, but you and I can't accomplish all its goals by ourselves, we must team with other professional organizations. As a "doer" I can do this. I find good ideas and grow them into accomplishments. I have helped over the years to successfully accomplish the following as an IEEE volunteer:

- myIEEE
- IEEE.tv
- Development of a seed grant part of the New Initiatives Program
- Helping lead SC 2002 & 2005, the two best Sections Congresses yet held
- The Changes/Simplification of the IEEE Membership application procedures
- Bringing new people forward as candidates for elected and ap-

pointed positions

- The Student Ethics Competitions
- Pre-University IEEE Clubs
- The formation of the Career Services Committee
- The Blue Ribbon Committee in 2000's proposal for a Member Benefit Organization
- First Chapters Chair of IEEE Social Implications of Technology Society in 1982-85
- First Professional Activities Chair of SSIT in 1982-85
- Northern Virginia/Baltimore/Washington SSIT Chapter Founding Chair in 1982-84

I will continue to take good ideas and grow the IEEE-USA for the future.

IEEE Activities

(S'63-M'65-SM'82)

Offices: IEEE Executive Committee, 2004-05. IEEE Board of Directors, 2004-05, 2001-02.

Committees/Boards: Member and Geographic Activities Board (MGAB), Past Chair, 2009. MELCC Chair, 2008. Regional Activities Board (RAB): Vice President, 2004-05; Past Chair, 2006-07; Member Activities, Vice-Chair, 2003; Region 2, Director, 2001-02. IEEE Ethics and Member Conduct Committee, Member, 2003-04. Information Technology Strategy Committee (ITSC), Member, 2006-07. IEEE-USA: IEEE-USA Critical Infrastructure Protection Commit-

tee, Chair, 2009-10; IEEE-USA Government Fellows Committee, Chair, 2010; IEEE-USA Nominations & Appointments Committee, Member, 2004; IEEE-USA Board of Directors, 2001-02; IEEE-USA Liaison Representative to the IEEE Ethics Committee, 1997-98; Admission and Advancement Committee, Member, 1990-94; TAB/USAB U.S. Technology Policy: Chair, 1992-93; Member, 1988-93, 1982-85; USAB Employment Assistance, Member, 1987-89; USAB Environmental Quality, Chair, 1984, 1978-85; USAB Ethics: Chair, 1994; Member, 1989-95.

Region: Region 2: Past Director, 2003-04; Director, 2001-02; Director-Elect, 1999-2000; Treasurer, 1994-98.

Council: National Capital Area Council, Chair, 1990-91.

Section: Northern Virginia Section: Director, 2010; Chair, 1987-88.

Societies: Society on Social Implications of Technology: Treasurer, 1985-93; AdCom, 1982-93; Chapter Chair, 1982-85; Professional Activities, Chair, 1982-85.

Council: Nano Technology Council, Secretary, 2007-10.

Chapter: Northern Virginia/Baltimore/Washington Society on Social Implications of Technology Chapter, Founding Chair, 1982-84. Student Branch: Pennsylvania State University, Member, 1962-64.

Conferences: U.S. Technology Policy Conference: Finance Chair, See Apter, p. 7

James M. Howard

Manager of Electric System Compliance
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Lakeland, Florida

www.time2meet.com/Jim-Howard

James M. Howard received the B.S.E.E. degree from the University of South Florida in 1985. He is currently Manager of Electric System Compliance with Lakeland Electric, a municipal electric company in Lakeland, Florida, where he has worked for over six (6) years.

Currently he is responsible for assuring that Lakeland Electric adheres to, and meets compliance with all North American Electric Reliability Corporation (NERC) and Federal Energy Regulatory Commission (FERC) approved Reliability Standards.

He joined Lakeland Electric after spending almost 24 years with Tampa Electric Company where he started as a Cooperative Education Student in 1979 and, through the next 23 plus years, held positions in Energy Delivery: Distribution Engineering, South Hillsborough Operations Center, and as Supervisor of Reliability for Transmission and Distribution.

Mr. Howard is a member of the Power Engineering, Aerospace Electronic Systems, and the Industry Applications Societies.

IEEE Accomplishments

A few of my key accomplishments within IEEE include:

- Serving on the IEEE-USA Board 7 years (2 years as a Director, 2 years as Member-at-Large, and 3 years as Secretary/Treasurer)
- Chairing Sections Congress 2005
- Chairing the IEEE Audit Committee
- Serving as Vice-President of Membership and Chapters for IEEE Power Engineering Society
- Serving as Vice-President of Member Services for AES
- Chairing the IEEE Membership Development Committee helping increase Senior Membership and begin the Senior Member Plaque program
- Serving as Vice-Chair Member Activities for the Regional Activities Board (RAB)
- Receiving numerous Awards from various levels of the IEEE (see below awards listing)
- Chaired the Florida West Coast Section (FWCS), the FWCS Power Engineering Chapter, and the Florida Council

Statement

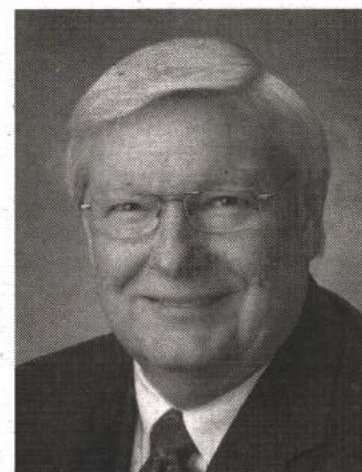
IEEE-USA is facing many challenges in the coming years and each of these challenges will require experienced leadership to coordinate and guide the organization. My experience in many areas of the IEEE, and in particular my in-depth ex-

perience on the IEEE-USA Board of Directors, places me in a unique position to help guide IEEE-USA in the challenges. My past tenure on the IEEE-USA Board of Directors as a Director, a Member-At-Large, and as your Secretary/Treasurer has provided me the opportunity to gain the knowledge to lead this organization as we address these challenges. This coupled with my many years of financial experience as IEEE Audit Committee Chair, member of IEEE Finance Committee, and as the IEEE-USA Treasurer has positioned me to gain an overall understanding of where IEEE-USA fits into the overall IEEE structure. Coupling these opportunities with the varied leadership roles in the IEEE I have served in, has given me the background to lead the IEEE-USA through these challenging years ahead and to guide our work in the areas in which IEEE-USA excels. I look forward to the opportunity to serve you as your IEEE-USA President-Elect.

IEEE Activities

(S'81-M'85-SM'91)

Committees/Boards: IEEE Board of Directors 2002-03. IEEE-USA Board of Directors, 2005-10: Secretary Treasurer, 2007-10, Member-At-Large, 2005-06. Region 3 Director, 2002-03. Region 3 Coordinator 2006-09. IEEE Audit Committee, Chair, 2003. Member 2002-04. IEEE Nominations and Appointments Committee (N&A), 2004-05;



RAB N&A Committee, 2004-05; IEEE Membership Development, Chair, 1998-99. Regional Activities Board, Membership Activities, Vice Chair, 1998-99.

Region: Region 3: Director 2002-2003; SPAC Chair, 2005-10; Strategic Planning Committee, 2005-10; Section's Congress Coordinator, 2007-2010; Area 4 (Florida Council) Representative, 1993-94; Membership Development Chair, 1996-97; Conference Committee, Chair, 1998-99.

Council: Florida Council: Chair, 1993-94; Vice Chair, 1992; Junior Past Chair, 1995; Membership Development Chair, 1994-2010.

Section: Florida West Coast Section: Chair, 1991-93; Vice Chair, 1990-91; Membership Development, Chair, 1994-98; Student Branch Mentor, 1997-2010.

Chapter: FWCS PE/IA Chapter Chair, 1990-91; Vice Chair, 1989 & 2010; Secretary/Treasurer, 1988.

Societies: Aerospace and Electronic Systems Society (AESS) Vice-President Member Affairs, 2005-10. Power Engineering Society (PES): Membership & Chapters, Vice President, 1997-98; Chapters Council, Chair, 1996; Membership Development, Chair, 1995; Membership Statistics Sub-Committee, Chair, 1994; Meetings Department, Secretary, 1994-98; Chapters Congress, Speaker, 1995; Distribution Design Committee, 1997-99.

Conferences: PES General Meeting Chair, 2007; IAS Annual Meeting Vice-Chair, 2006; Sections Congress (SC) '05, Steering Committee, Chair, 2003-05; Industrial & Commercial Power Systems (I&CPS), Vice-Chair, 2004, 2000; Publications, Chair, 1993; Region 3 South-eastCon, Chair, 1996; Power Engineering Society Winter Meeting, General Chair, 1998; SouthCon, Director, 2004, 1995-99, Treasurer, 1998.

Awards: Florida West Coast Section Engineer of the Year Award, 2006. Florida Council Outstanding Engineer Award, 2006; Region 3 Director's Award - Section's Congress, 2005; Florida West Coast Section PES Chapter Outstanding Engineer, 2000; Power Engineering Society Chapters Council, 1998; Region 3 Outstanding Service, 1996; Florida Council Outstanding Service, 1995.

Candidates for Region 2 Delegate-Elect/Director-Elect

The following individuals are candidates for IEEE Region 2 (Eastern USA) Delegate-Elect/Director-Elect, 2011-2012 and Delegate/Director, 2013-2014.

Parviz Famouri

Director, Electromechanical Systems Laboratory
Associate Chair for Research & Graduate Studies
Lane Dept. of Computer Science & Electrical Engineering
West Virginia University
Morgantown, West Virginia

www.famouri.com

Parviz Famouri received the B.S. degree, Applied Mathematics, Kentucky State University, 1981, and the B.S., M.S., and Ph.D., all in Electrical Engineering in 1982, 1986, and 1990, respectively. He joined WVU in 1990 where he founded and is now professor and Director of Electromechanical Systems Laboratory (EMS) where many innovative ideas were created and products have been patented and developed. His primary interests and expertise are in electric machines, power electronics and nanotechnology. He worked for Emerson Motor Company (St. Louis) as an Engineering Scientist in 1994. He and his students are the authors of over 100 technical research papers. Famouri's research has been supported by NSF, DARPA, Army Research Office, Department of Energy (DoE), NASA and electric utilities. He was elected as WVU Faculty Senate Chair in 2006-2007 where he led more than 2500 faculty members. He is a member and

was the President of Morgantown North Rotary Club.

IEEE Accomplishments

- As the Regional Activities Board Vice Chair for Section/Chapter Support, I led the effort for IEEE Councils to be allowed to establish technical chapters similar to Technical Societies.
- As the Regional Activities Board Vice Chair for Section/Chapter Support, I coordinated the efforts of many committees to organize a successful 2006 Section Congress in Tampa, FL.
- As the Regional Activities Board Vice Chair for Section/Chapter Support, I co-led (with Ralph Wyndrum) the development of the revised Distinguished Lecturer Program.
- As the Chair of the Pittsburgh Section, I revitalized the Section by increasing attendance at both Executive Committee and technical meetings.
- As the Region 2 Student Activities Chair (SAC), for the first time in Region 2 history, I established and organized the Region 2 Hardware Contest that is currently going strong after 12 years.
- As the Region 2 IEEE-USA Professional Activities Committees for Engineers (PACE) Coordinator, I organized PACE training workshops for the Region 2 Section PACE leaders
- As the Nano Technology Council Chapter coordinator I led



a world-wide effort to establish its first ten technical chapters.

Statement

In 2004, former President Arthur Winston asked the Institute to examine IEEE memberships, industry and corporate relationships.

After a weekend of brainstorming with 52 participants from industry, academia, and government, it became clear to me that members must be at the center of the Institute, and IEEE must be a **Member Centered** organization.

I also realized that for our members to succeed and thrive, industry has to be involved. IEEE has many educational and electronic tools that can assist our members, engineers, and industry. I will make Region 2 a model of an **Industry Involved** region.

The future of IEEE is in our young engineers, engineering students, and children. Our assets are our Members, Senior Members, Life Members and Fellows. I will link the experience of Members with youth to bring back the engineering enthusiasm to our profession. I will steer the organization to be **Forward Looking** and always look into the future as well as remembering our past.

"Leadership is creating an environment in which those you lead succeed."

IEEE Activities

(M'90-SM'98)

Committees/Boards: Regional Activities Board (RAB); Vice Chair, 2004-05; RAB/TAB Section Chapter Support Committee Past Chair, 2007; RAB Membership Development Committee, 2005; RAB/TAB Section/Chapter Support Committee: Past Chair, 2007; Chair, 2004-05; RAB Operating Committee, 2004-05; RAB Industry Relation Committee, 2004; RAB GOLD Committee, 2004-05; RAB Finance Committee, 2004-05; RAB Student Activities Committee, 1999-2000. IEEE Committee on Earth Observation, IEEE Nanotechnology Council (NTC), Corresponding Member, 2010.

Region: Region 2 MGA Coordinator, 2009-10; Sections Congress Coordinator, 2007; Secretary, 2005; Professional Activities, 2001-04;

IEEE-USA Professional Activities Committees for Engineers (PACE), Region 2 Coordinator, 2002-04; Student Activities, 1998-2000.

Section: Pittsburgh Section: Student Activities, 1999-2000; Section Chair, 1997-98; Section Vice Chair, 1996-97; Section Secretary, 1995-96; Section Treasurer, 1994-95.

Subsection: Upper Monongahela Subsection: Chair, 1993-94; Vice Chair, 1992-93; Treasurer, 1991-92; Professional Activities Committee, 1993-94; Delegate-at-Large, 1990-91.

Society: IEEE Industry Application Society (IAS): IA-Education Department, Asynchronous Education, 2004-10; IEEE-IAS Industrial Drives Committee; IEEE-IAS Electric Machines Committee; SAC AT&T Labs Student Enterprise Award Judging Committee, Member, 1999-2000; IAS Member, 1993-95.

Councils: IEEE Nanotechnology Council: Vice President of Technical Activities, 2010; Regional/Interest Groups (including Chapters), 2007-10. IEEE Neural Networks Council, Member 1993-95.

Awards: IEEE-USA Board of Directors Regional Professional Leadership Award, 2004. IEEE Pittsburgh Section Dedicated Service Award, 2001. IEEE Pittsburgh Section, Distinguished Service Award, 2001. IEEE Third Millennium Medal, 2000. IEEE Pittsburgh Section Past Section Chair Award, 2000.

Murty S. Polavarapu

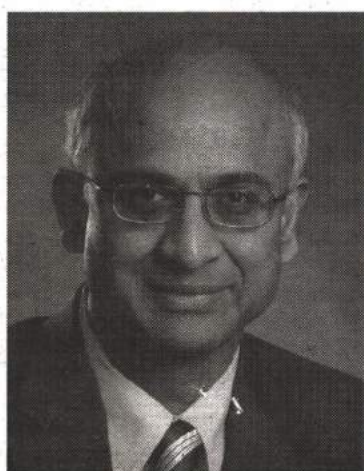
Senior Principal Engineer
BAE Systems
Manassas, Virginia

www.murtyp.org

Over two decades in industry, Murty Polavarapu has worked on all facets of semiconductor technology with a focus on developing advanced memory and logic products for the Department of Defense. His current interests include phase change memory devices and nanotechnology applications for space systems. He holds Masters degrees in Physics from India, Electrical Engineering from Howard University and Technology Management from University of Pennsylvania.

Polavarapu's keen interest in pre-college education is underscored by his current service on the Fairfax County School Board's Career and Technical Education Advisory Committee and his Peace Corps volunteer tenure as a physics teacher in rural Fiji. He also mentors local IEEE student branches and established an annual Ethics Awareness Conference.

In addition to ten patents in semiconductor technology, Polavarapu received the Dominion Semiconductor President's Award and IBM Outstanding Technical Achievement Award. He is a Fellow of Washington Academy of Sciences and a member of AAAS.



IEEE Accomplishments

- Invigorated IEEE leadership training and promoted member engagement across Region 2 by conducting workshops in Johnstown, PA; Youngstown, OH; Cleveland, OH; and McLean, VA.
- As the IEEE-USA Coordinator for Region 2, improved the dissemination of IEEE-USA programs and services to sections and members.
- Founded the Nanotechnology Council Chapter in the National Capital Area.
- Mentored the George Mason University Student Branch and established its annual Ethics Awareness Conference that has now grown into an area-wide event.
- Introduced the IEEE virtual community for the National Capital Area, the first of its kind at a

local level. This community serves as a forum for online discussions, as a repository for Section records and to publicize local events. www.ieeecommunities.org/nca

- Revived the dormant Electron Devices Society Chapter and introduced premier events such as a series of talks on nanotechnology.

- Increased involvement of the Section in pre-college activities with one additional high school club and support for local FIRST Robotics teams. Also worked with Northern Virginia Technology Council in conducting a Nanotechnology Education Seminar for local teachers.

- Contributed to the improved member communications strategy in the National Capital Area with both electronic and print distribution of newsletters. www.ieee.org/escanner.

Statement

I ask for your vote to best serve our members by focusing on these three areas:

• Engage the member

Our members will realize the full value of their membership if they are better engaged in the entire spectrum of IEEE activities at all levels. I will work with local sections to develop and disseminate toolkits documenting model technical and professional events that can be replicated across the region. This will result in improved member engagement opportunities while minimiz-

ing duplication of effort and learning curve.

• Involve industry

I will nurture programs reaching across sections, academia and local industries which focus on practical applications of emerging technologies while offering needed professional development for practicing engineers.

• Spread the word

There is a lot of good work done through our Sections and Chapters that if communicated better inside and outside IEEE will improve member experience and IEEE image. I will expand outreach via social networking channels and electronic newsletters while enhancing appropriate print communications to reach members and the public.

IEEE Activities

(M'97-SM'98)

Committees/Board: IEEE-USA: IEEE-USA Employment and Career Services Committee Member, 2009-10; IEEE-USA Career and Workforce Policy Committee Member 2009-10; IEEE-USA Pre-College Education Committee Member, 2003-05; IEEE-USA Research and Development Policy Committee Member, 2002-10.

Region: Region 2: IEEE-USA Coordinator, 2009-10; Executive Committee Member, 2006-10; Employment and Career Services Co-

ordinator, 2009-10; South Area Chair, 2006-08; Pre-College Education Coordinator, 2003-05.

Section: Northern Virginia Section: Membership Development Committee Chair, 2010; Pre-College Committee Chair, 2008-09; Professional Activities Committees for Engineers (PACE) Chair, 2007; Section Chair, 2005; Chair-Elect and Vice Chair, 2004; Secretary, 2003; Treasurer, 2002.

Chapters: Nanotechnology Council Northern Virginia/Washington Chapter Chair, 2009-10. Electron Devices Society Northern Virginia/Washington Chapter: Treasurer, 2009-10; Chair, 2003-05, 1999-2001. Society on Social Implications of Technology, Northern Virginia/Washington/Baltimore Chapter Chair, 2005, 2003.

Society: Electron Devices Society (EDS): Regions/Chapters Subcommittee Vice Chair, 2006-10; Newsletter Editor - North America-East, 2002-04.

Conferences: Aerospace Conference, Session Co-Chair, 2006-07. International Reliability Physics Symposium, Memory Subcommittee Member, 2007.

Representatives: IEEE-USA Liaison to Engineers Week Foundation, 2010. Washington Academy of Sciences, Northern Virginia Section Delegate, 2004-10. DC Council of Engineering and Architectural Societies, Northern Virginia Section

See Polavarapu, p. 7



Leadership Award—Gerard Christman received the Distinguished Leadership Award for his outstanding leadership as the IEEE Region 2 South Area Chair in 2009.



Strother Award—The Northern Virginia Section's James F. Strother Meritorious Service Award was presented to Murty Polavarapu (center back). Previous recipients Rex Klopfenstein (left) and Amarjeet Basra (right) also visited with Patricia Strother at the banquet. The award was established in honor of her late husband, who was a dedicated volunteer and officer of the section.



Keynote Address—Barry Worthington, Executive Director of the United States Energy Association, talked about the energy industry and emerging areas of energy investment, and answered audience questions.

IEEE Volunteers and Friends Recognized at Annual Awards Banquet

Music by The Saints of Sound Jazz Quintet set an energetic mood for more than 160 members and guests who attended the annual IEEE National Capital Area Awards Banquet on Saturday, May 1.

In his keynote talk, Barry Worthington focused on emerging areas of energy investment in the United States, including renewable and sustainable energy, and IEEE's role in developing new power sources. Worthington is the Executive Director of the United States Energy Association (USEA) in Washington, DC.

During the awards ceremony, nearly 100 individuals and several organizations were recognized for their volunteer contributions, support of IEEE, and leadership of the sections, chapters and student branches.

The first place winners from three regional high school science fairs also received awards.

Four of the newly-elected 2010 IEEE Fellows from the National Capital Area, Ganesh Gopalakrishnan, Dimitrios E. Ioannou, Amitabh Varshney, and Daniel P. Wilt, attended the banquet and were recognized for their professional achievements.

Banquet sponsors BAE Systems, Integrity Applications Incorporated, the National Capital Area Consultants' Network, and Virginia Tech Advanced Research Institute helped make the festive evening possible.

The appearance of The Saints of Sound Jazz Quintet was made possible by Dr. Kiki Ikossi and I-Cube Inc.

This year's banquet was hosted by the Washington Section at the Crowne Plaza Hotel in Silver Spring, MD. Officers of the Washington and Northern Virginia sections served on an organizing committee headed by the Washington Section Chair, Dr. Raj Madhavan, and assisted by a banquet coordinator, Shelly Werner-Hood.

Washington Section Awards

Outstanding Leadership Award – Tim Weil for distinguished service and leadership as the 2009 Chair of the Washington Section

Administrative Award – Raj Madhavan, 2009 Vice Chair

Administrative Award – Mary Tobin, 2009 Treasurer

Administrative Award – Monica Taysing-Lara, 2009 Secretary

Volunteer of the Year – Debi Siering, for her outstanding leadership in organizing Communications Society chapter activities

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

Distinguished Service Award – Varetta Huggins, for her outstanding contributions to the Women in Engineering chapter

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

Distinguished Service Award – Tom Starai, for his outstanding contributions to the Computer Society

Sustained Superior Performance Award – Raj Madhavan, for his outstanding leadership in organizing Robotics and Automation Society chapter activities

Meritorious Achievement Award – IEEE Global History Network Delegate to District of Columbia Council of Engineering and Architectural Societies – James Christian

Delegate to Washington Academy of Sciences – Haik Biglari

Directors – Gerard Christman, Paul Coate, Roger Hardwicke, Kiki Ikossi, Fari Schlake and Tom Starai

PACE Chair – Haik Biglari
Communications Society Chapter Chair – Debi Siering

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

Graduates of the Last Decade Chapter Chair – Atanas Atanasov II

Capitol College Student Branch – Nina Acree, President; Charles Conner, Faculty Advisor; Jerry Gibbon, Section Liaison

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

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

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

First Place, Montgomery County Science Fair – Austin Duff, for "Autonomous Robotics & Environmental Interactions"

Northern Virginia Section Awards

Outstanding Leadership Award – Monica A. Mallini, for distinguished service and leadership as the 2009 Chair of the Northern Virginia Section

Administrative Award – Barry Tilton, 2009 Vice Chair

Administrative Award – Timothy F. Settle, 2009 Treasurer

Administrative Award – Jeff Poston, 2009 Secretary

Volunteer of the Year – Barry Tilton, for his distinguished service to the Northern Virginia Section

Distinguished Service Award – Katie B. Schaffold, for her sustained leadership of the GOLD and Women in Engineering affinity groups, and for her outstanding service to the Northern Virginia Section

Distinguished Service Award – Elizabeth Gibbon, for her service as the Northern Virginia Section's Family Liaison and public ambassador of IEEE

Sustaining Friend of IEEE Northern Virginia Section – Integrity Applications, Incorporated, with Joseph L. Brickey accepting the award

Sustaining Friend of IEEE Northern Virginia Section – Virginia Tech Advanced Research Institute, with Saifur Rahman accepting the award

Friend of IEEE National Capital Area – Olive Garden Restaurant, Tysons Corner

Communications Society Chapter Chair – Vinod K. Mishra

Control Systems Society Chapter Chair – Seddik Benhamida

Signal Processing Society Chapter Chair – Jeff Poston

George Mason University Student Branch President – Ivan Botov

George Mason University Student Branch Past President – Fiona Lu

First Place, Fairfax County Regional Science and Engineering Fair – Victor S. Youk, for "Integrated Touch and Display System Using LEDs"

First Place, Prince William–Manassas Regional Science Fair – Tylor Lang, for "Effect of World-Wide Reduction of the Human Carbon Footprint through Economic Use of Hydrogen"

Thank You!

The support of these companies helped make the 2010 banquet a great success.

BAE Systems

Integrity Applications Incorporated

National Capital Area Consultants' Network

Virginia Tech Advanced Research Institute

I-Cube Inc.



Karl Berger



Katie Schaffold



Varetta Huggins

Joint Awards

Distinguished Service Award – Tim Weil, in recognition of his dedicated service to the National Capital Area

Outstanding Chapter of the National Capital Area – Vehicular Technology Society Chapter, Land Transportation Committee, with Karl W. Berger accepting the award

Scanner Team – Pete Sypher, Editor-in-Chief; Charles A. Baldi, Northern Virginia Section Editor; Walter H. Lee, Jr., Washington Section Editor; Rex C. Klopfenstein, Webmaster; David Booth, Advertising Manager

Five Years of Meritorious Service as Scanner Managing Editor – Elsie Grant

Friend of IEEE National Capital Area – Khanh Luu, for outstanding service beyond the call of duty in helping the National Capital Area publicize its meetings and events

Friend of IEEE National Capital Area – University of Maryland, with Ted Knight accepting the award

Aerospace and Electronic Systems Society Chapter Chair – William Culver

Antennas and Propagation Society Chapter Chair – Brian Riely
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 – Harry Sauberman

Geoscience and Remote Sensing Society Chapter Chair – James C. Tilton

Industry Applications Society Chapter Chair – Chuck Sisung
Information Theory Society Chapter Chair – James A. Christian
Magnetics Society Chapter Chair – Can E. Korman

Microwave Theory and Techniques Society Chapter Chair – Bruce J. Levine

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

Oceanic Engineering Society Chapter Chair – Michael Goldberg

Photonics Society Chapter Chair – Thomas Murphy

Professional Communication Society Chapter Chair – Hugh Owen

Power and Energy Society Chapter Chair – Amarjeet Basra

Reliability Society Chapter Chair – Rakesh Chopra

Robotics and Automation Society Chapter Chair – Raj Madhavan

Society on Social Implications of Technology Chapter Chair – Barry Tilton

Technology Management Council Chapter Chair – Doug Holly
Vehicular Technology Society Chapter and Land Transportation Committee Chair – Karl W. Berger

Life Members Chair – David Booth
National Capital Area Consultants' Network Chair – Monica A. Mallini

Women in Engineering Chapter Chair – Varetta Huggins

Special Awards

Distinguished Leadership Award – Gerard Christman, for his outstanding leadership as IEEE Region 2 South Area Chair in 2009.

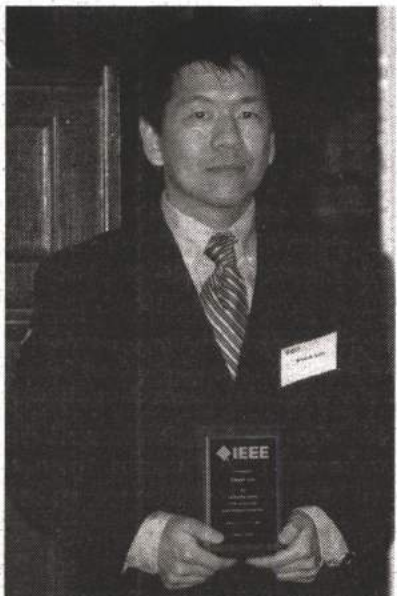
James F. Strother Meritorious Service Award – Murty Polavarapu, for his leadership and dedication to IEEE, Region 2 and the Northern Virginia Section.

John Margosian Meritorious Service award – Paul Hazan, for his outstanding leadership and dedicated service to the Washington Section and National Capital Area.

(Photos of Christman, Schaffold and Grant by Khanh Luu. All other banquet photos by Turner Bridgforth.)



Stanley Onye



Khanh Luu



Elsie Grant

Election

Apter, from p. 4

1984; Session Coordinator, 1989. AAES Government Affairs Conference, IEEE Sessions Chair, 1991-93.

Representative: AAES Coordinating Committee on Environment, 1984.

Awards: James F. Strother Meritorious Service Award, 2006. IEEE Millennium Medal, 2000. IEEE Centennial Medal, 1984.

Polavarapu, from p. 5

Delegate, 2002-06. George Mason University Electrical Engineering Industrial Advisory Committee, 2005-10. University of District of Columbia, Electrical Engineering Industrial Advisory Committee 2002-05.

Awards: Distinguished Leadership Award (Washington/Northern Virginia Sections), 2008. James F. Strother Meritorious Service Award, 2010, 2007. IEEE Regional Activities Board Achievement Award, 2005. IEEE Northern Virginia Section Volunteer of the Year, 2004. IEEE Washington/Northern Virginia Sections, Distinguished Service Award, 2004. IEEE Third Millennium Medal, 2000.

CALENDAR, from p. 3

Saturday, August 14, 2010

D.C. United Soccer Game

Sponsors: Women in Engineering, Graduates of the Last Decade

Time: 8:00 pm

Place: RFK Stadium, Washington, DC

Directions: Take Metro to the Stadium-Armory station (Orange, Blue lines). See www.dcunited.com/stadium.

More Info: See the D.C. United vs. FC Dallas game with WIE and GOLD members. Family and friends are welcome to attend!

Cost: \$16 for IEEE members (half off retail ticket price!); \$24 for non-members. Advance payment required.

Contact: Please register by Monday, July 19 at http://meetings.vtools.ieee.org/meeting-view/list_meeting/2643. Payment must be received by Monday, August 2.

Tuesday, August 24, 2010

Simulation and Virtual Reality for Medical Applications

Sponsors: Computer Society, American Society for Quality (ASQ) Section 509 Software SIG, Society for Software Quality (SSQ)

Speaker: Dr. Jim X. Chen, George Mason University

Time: Networking & pizza 6:30 pm; program 7:00-8:00 pm

Place: Videoconference with two local sites: MITRE Corp., Building 2, Conference Room 1N100, 7515 Colshire Drive, McLean, VA
FDA, Bldg. 66, Room G512, 10903 New Hampshire Ave., Silver Spring, MD

More Info: See Diamond story, p. 8. All interested IEEE members and guests are invited. Pizza and soda will be provided. If you cannot attend at either location, select telephone dial-in when you register and provide your Skype user ID.

Contact: Advance registration required by 12:00 noon on Monday, August 25 at www.asq509.org/ht/d/DoSurvey/i/26913. If your plans change, please email ankums@mitre.org to cancel your reservation. To RSVP for FDA, please indicate citizenship (see July 27 announcement, p. 3).

diamond stories

Thursday, July 8, 2010

◆ Trends in the Telecommunications Industry

This presentation includes an overview of the recent environment of the voice, data, and multimedia communications industry. The telecommunications industry grew rapidly in the 1990s, providing wonderful opportunities for many business people and entrepreneurs. Then the bottom fell out of the market. Many companies failed, merged or formed joint ventures. There has been more churn than analysts can follow. Additional uncertainty has been caused by the emergence of competing technologies such as Voice over IP, which allows people to use the Internet for voice calls. This increases the woes of traditional telephone companies, since the models used for Internet rates do not generate as much revenue. Time will tell which technologies and companies will survive. Engineers and other creative designers are introducing new services almost daily, and many of these are becoming very popular. However, this growth alone cannot sustain the industry, because the revenues produced by these services are low. The Internet culture has been one of offering free service, with generally low quality, which is diametrically opposed to the telecommunications culture. Users are showing that they are willing to pay for these services, but this change is slow in coming. Services such as VoIP, electronic commerce, and social networking do appear to have a solid future, and these services, along with mobile communications, will help the industry recover.

The nature of the telecommunications industry has changed, and will continue to evolve. There are numerous opportunities for people who understand the new types of services, but they must have the right skills. This talk illustrates the need for strong management skills to accompany the technical skills that engineers typically bring to the industry.

Celia Desmond is president of World Class Telecommunications. She provides training in telecommunications management and has lectured internationally on programs for success in today's changing environment.

As a director at Stentor Resource Center Inc., Ms. Desmond was instrumental in establishing culture and new processes for service and product development and for project governance. She helped establish a development-coaching program for employees, and acted as a coach for Stentor and Bell Canada employees. She also coached project managers as they established a coaching network to build a new project management program for Stentor. At Bell Canada, she provided strategic direction to corporate planners, ran technology and service trials, standardized equipment, and provided technical and project management support to large business clients.

Ms. Desmond has held numerous senior management positions in IEEE, including Director, Secretary, Vice President of the Technical Activities Board, President of the Communications Society, Region 7 Director (President of IEEE Canada), Division III Director, Vice President of the Engineering Management Society, and donations chair of the IEEE Canada Foundation Board. She also served as IEEE's Project Direc-

tor for Certification in Wireless Engineering Technology, managing a team of over 100 people in eight different development areas.

Ms. Desmond holds a M.S. in engineering, a B.S. in mathematics and psychology, an Ontario Teaching Certificate, and Project Management Professional (PMP) certification. She authored *Project Management for Telecommunications Managers* (Springer). Her pocket book, *Project Management for Telecommunications Projects* is scheduled for publication by Wiley in 2010.

Tuesday, July 20, 2010

◆ Ultra-Wideband and Interleaved Polyfractal Antenna Arrays

Recently, in order to successfully combine the positive attributes of both periodic and random arrays into one design, a novel class of arrays, known as fractal-random arrays, has been introduced. In addition, global optimization techniques, such as genetic algorithms, have been applied to antenna array layouts to provide highly directive, thinned, frequency agile, and shaped-beam antenna systems. However, these methodologies have their limitations when applied to more demanding design scenarios. Global optimizations are not well equipped to handle the large number of parameters used to describe large-N arrays, and fractal-random arrays lack the recursive properties needed to reconstruct their geometries exactly from a small set of parameters.

A new of arrays called polyfractal arrays can overcome these difficulties and have properties well suited for the optimization of large-N arrays. These polyfractal arrays possess underlying self-similar properties that can be exploited to exactly reconstruct the array geometries from small sets of parameters and to increase the speed of the associated array factor calculations. In addition, an autopolyfractal-based chromosome expansion native to polyfractal arrays is introduced that can dramatically accelerate the genetic algorithm optimization process. This process allows the genetic algorithm to first evolve simple designs very quickly and then add increasing levels of complexity when they are needed to continue the optimization. The entire procedure has been shown to be very effective in creating optimized large-N antenna layouts. For example, a 1616-element linear array can be optimized to possess a -24.30 dB sidelobe level with a 0.0056° half-power beamwidth. In addition, robust Pareto optimization techniques can be applied to reduce the peak sidelobe levels at several frequencies specified over a wide bandwidth. These powerful array designs can be utilized as building blocks in robust, multi-beam, ultra-wideband antenna array systems.

Joshua S. Petko works in the RF antenna systems department at Northrop Grumman Electronic Systems in Linthicum, MD. His research interests include antenna theory, metamaterials, computational electromagnetics, fractal electro-

dynamics, and evolutionary algorithms with a focus on fractal antenna elements and arrays.

Dr. Petko received a B.S. in electrical engineering in 2002, an M.S. in electrical engineering in 2004, and a Ph.D. in 2008, all from Pennsylvania State University.

Tuesday, August 24, 2010

◆ Simulation and Virtual Reality for Medical Applications

This presentation is an overview of several projects in the Graphics Lab at George Mason University. The lab has implemented several virtual reality systems for medical applications. A knee surgery assistance system includes generating patient-specific 3D knee models from patient's magnetic resonant images (MRIs), simulating knee motion on the patient-specific knee model, and visualizing biomechanical information on the model. A virtual ear surgery system includes temporal bone construction, visualization, and virtual surgery. A virtual human anatomy system includes natural color human body with separated organs and labels. Virtual anatomy is achieved through a phantom device.

Jim X. Chen, Ph.D., is a professor of computer science and director of the Visual Computing Lab at George Mason University. His research interests include computer graphics, virtual reality, visualization, networking, and simulation for medical applications. He is Associate Editor-in-Chief of *Computing in Science & Engineering* (CISE) and General Co-Chair of VRCAI2010. He served as General Co-Chair of IEEE VR 2006. He has authored four books and published over 100 research papers.

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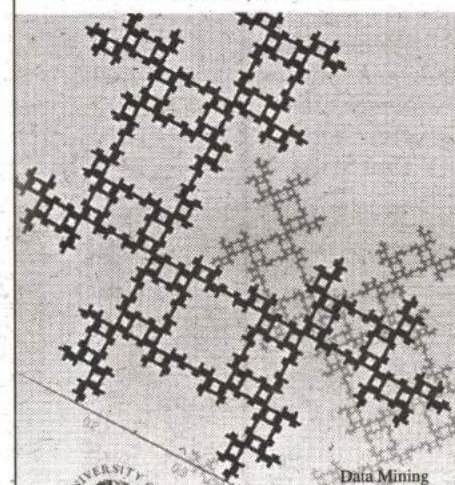


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