President Clinton Salutes Engineers

IEEE Year 2000 Awards Banquet Celebrates the Third Millennium

The NCAC-hosted Year 2000 Annual Awards Banquet held Saturday, April 15, attracted approximately 270 members, awardees and guests, and featured a keynote speech by Congresswoman Constance Morella, who represents Maryland's 8th District.

Also participating was IEEE President Bruce Eisenstein, who was welcomed warmly by the members and their guests.

In addition to the local awards from the Washington and Northern Virginia sections, 48 local awardees receiving Third Millennium medals were honored.

President Clinton Salutes Engineers

Although he could not be there in person, President Bill Clinton sent a special message in which he said, "I am delighted to congratulate the distinguished engineers whose professional achievements have earned them millennium medals," (See complete message on page 6).

Satish Aggarwal, past chair of the Washington Section, led a special Awards Banquet Committee in organizing the banquet, held this year at the Bethesda Naval Club on the grounds of the National Naval Medical Center. in Maryland.

"Engineers are creating a new world"

In his opening remarks, Aggarwal said, "Today we celebrate the genius which helps much of the world to realize its dreams, and we remember those in our communities who still have a dream to fulfill. We always attempt to turn those dreams and ideas into reality." He added, "Engineers are creating a new kind of world that breaks through barriers among nations and regions. Engineers create products, systems and satellites that enable us to do such things as communicate with everyone, at any time, bringing us together on an information super highway."

Morella Supports Technology

In her keynote speech, Connie

◀ *Satish Aggarwal, Banquet Committee Chair, presents bouquet of appreciation to The Honorable Connie Morella.*

Pictured from left are Catherine Jordan, Chair, Washington Section; IEEE, President Bruce Eisenstein; NRC Commissioner Kenneth Rogers; Connie Morella, and Satish Aggarwal, who is Past Chair of the Washington Section. ⬇

Morella wholeheartedly applauded the contributions made by engineers. Now in her seventh term in the House of Representatives, Morella is recognized nationally for her work on technology and women's issues. The Bethesda resident, a former teacher and college instructor, has promoted federal funding for technology and scientific research. Morella chairs the Technology Subcommittee of the House Science Committee and she also serves on the House Government Reform Committee, where she is vice chair of the District of Columbia Subcommittee. NCAC presented a plaque to Morella that reads, "The Institute of Electrical and Electronics Engineers, Inc. honors The Honorable Connie Morella for her leadership in advancing the cause of technology and the engineers who develop it."

Dr. Eisenstein, who assisted in the awards presentations, has spoken widely about millennium events to highlight IEEE accomplishments and aspirations for the future. Eisenstein is a professor at Drexel University in Philadelphia. Prof. Eisenstein and Rep. Morella,

joined the Section Chairs in the presentation ceremony.

Tomorrow's Engineers Take Part

The Awards Banquet Committee also made a special point to include

BANQUET

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Editorial Policies and Procedures

Calendar Items and Announcements.

Please submit calendar items in the format used in the Calendar of Events. You can use the form at http://members@aol.com/scannered (preferred method) or send email to ncac-scanner@ieee.org. You can also mail items to the managing editor at the address above. A diamond symbol (♦) preceding the title of a presentation title indicates that further information is included in the Diamond Stories section following the Calendar. Diamond stories should include a synopsis of the event and a biographical sketch of the presenter including academic background, current position, notable achievements, and IEEE and other professional affiliations.

Other contributions, such as reports on chapter events and other member activities, reviews of books by or of interest to members, are most welcome. Please submit them to the managing editor, electronically if possible.

NCAC Web Page.

The Calendar is maintained on the NCAC Web page at ewh.ieee.org/r2/capitalarea. Click on Scanner Online, directly below the IEEE logo. Check here for events submitted too late for print publication.

Advertising:

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

Deadlines.

The editor reserves the right to set policies and procedures necessary to provide members with a newsletter that is informative and timely. Deadlines must be strictly adhered to to keep the publication on schedule. If you are planning an event and have insufficient information by the deadline, please contact the managing editor.

The deadline for the upcoming issue will always be published on this page.

The deadline for the September-October issue is July 20, 2000

Attendance at IEEE meetings.

IEEE meetings are open to members and guests. When meetings include meals, please make timely reservations, and cancel in sufficient time if necessary. Any IEEE member may attend the monthly NCAC and Section administrative committee meetings. Please see the Calendar of Events for times and places.

CALENDAR OF *events*

July 12, 2000
[Wednesday]
NoVa Executive Committee Meeting
Sponsor: Northern Virginia Section
Place: Allee's American Grill, Tysons Corner Marriott, 8028 Leesburg Pike
Time: Dinner: 6:00 pm
Meeting: 7:00 pm
More Information: The Northern Virginia Section Executive Committee meets monthly. NCAC meets alternately with the Washington and Northern Virginia sections. All interested IEEE members, particularly chapter officers, are invited to attend.
Contact: Jackie Hunter, 703-803-8701 or j.hunter@ieee.org

18 July 2000
[Tuesday]
NCAC Consultants' Network Meeting (DC/MD)
Place: Dinner: Seven Seas Restaurant, 8503 Baltimore Blvd., College Park, MD.
Meeting: A.V. Williams Engineering Bldg., Rm 2328
Time: Dinner: 6:00 pm
Meeting: 7:30 pm
More Information: http://www.rebsig.com/ieee
Directions: Beltway to Rte. 1 south at College Park. Restaurant is about 1 mile on left.
For meeting, continue on Rte 1 south, turn right on Campus Drive and immediately right on Paint Branch Drive. A.V. Williams Bldg is on right opposite trailers and parking lot is on the left.
Contact: Peter Nuspl, 301-654-1144

24 July 2000
[Monday]
◆ WARC 2000 Results
Sponsor: Communications Society
Place: TRW, Reston, VA
Time: 6:00 pm
Speaker: Mr. Paul Locke, Senior Director, Systems Engineering and Spectrum Management ORBCOMM Global, Dulles, VA
More Information See Diamond Story.
Directions: TRW Building at Reston Parkway and Sunset Hills Rd. From Dulles Toll Road, heading west from Tysons Corner, exit at Reston Parkway, move immediately to far left lane, turn left onto Sunset Hills and left into TRW parking lot.
Contact: seelig.fred@orbcomm.com

27 July 2000
[Thursday]
Executive Committee Planning Meeting
Sponsor: Information Technology Society
Place: Royal Jade Chinese Restaurant, 301-441-8880
Time: Dinner: 6:00pm

Meeting: 7:00 pm
More Information: Possibility of a speaker on nanotechnology.
Directions: Royal Jade is on the 1st floor of a mid-rise building at the corner of Hanover and Greenbelt roads.
From 295 south: take exit for Greenbelt Rd., turn left at end of ramp, left at stop light onto Greenbelt Rd. Go about 1 mile and turn right on Hanover Pkwy;, take first left into parking lot.
From 295 north, take exit for Greenbelt Rd., go about 1/3 mile and turn right onto Hanover Pkwy; take first left into parking lot.
Contact: Greg Strutt at gstrutt@home.com

29 July 2000
[Saturday]
◆ Data Base Design - Beginner Level Workshop
Sponsor: IEEE NCAC
Place: Computer Lab 0123, University of Maryland University College (UMUC) Conference Center, College Park
Time: 9:00 am to 4:00 pm with a noon to 1:00 lunch break
Cost: $80 for IEEE members; $100 for non-members, $20 of which will be applied toward IEEE membership dues if you join. (Cost of lunch is not included.)
More Information: See Diamond Story
To Register: Contact Jackie Hunter at 703-807-8701 or j.hunter@ieee.org.
Deadline: 5 pm Wednesday July 19. Class size is limited to 30; workshop may be canceled if registration is less than 10.

1 August 2000
[Tuesday]
NCAC Consultants' Network Meeting (VA)
Place: Allee's American Grill, Tyson's Corner Marriott, corner of Leesburg Pike and Crescent Towers Drive, Tyson's Corner, VA
Time: Dinner: 5:30 pm
Meeting: 7:00 pm
More Information: http://www.rebsig.com/ieee
Directions: Beltway to Rt. 7 west (Leesburg Pike), right on Crescent Towers Drive, then immediately right into Marriott parking lot.
Contact: Peter Nuspl 301-654-1144

1 August 2000
[Tuesday]
Washington Section AdCom Meeting
Place: Allee's American Grill, Bethesda Marriott, 5151 Pooks Hill Road, Bethesda, MD
Time: Dinner: 6:00 pm
Meeting: 6:30 pm
Contact: Jackie Hunter 703-803-8701 or j.hunter@ieee.org

9 August 2000
[Wednesday]
NoVa Section Executive Meeting and NCAC AdCom Meeting
Place: Allee's American Grill, Tysons Corner Marriott, 8028 Leesburg Pike
Time: Dinner: 6:00 pm
Meeting: 7:00 pm
Contact: Jackie Hunter, 703-803-8701 or j.hunter@ieee.org

19 August 2000
[Saturday]
◆ Enhancing Your Web Site Intermediate-Level Workshop
Sponsor: IEEE NCAC
Place: Computer Lab 0123, University of Maryland University College (UMUC) Conference Center, College Park
Time: 8:30 am to 4:30 pm with a noon to 1:00 lunch break
Cost: $125 for IEEE members; $175 for non-members, $50 of which will be applied toward IEEE membership dues if you join. (Cost of lunch is not included.)
More Information: See Diamond Story
To Register: Contact Harold Stinger, 301-614-8600, ext. 301 or e-mail to hstinger@sgt-inc.com.
Deadline: 5 pm Wednesday Aug 9. Class size is limited to 30; workshop may be canceled if registration is less than 10.

12 September 2000
[Tuesday]
Life Member Chapter Meeting
Sponsor: NoVa Life Member Chapter
Place: Bentley's, 6650 Arlington Blvd., Falls Church VA, Annandale Rd. and Rte. 50
Time: Lunch: 1:00 pm
Cost: Cost of lunch
More Information: Topic and speaker to be determined; check the next issue of the *Scanner*
Contact: Jackie Hunter, 703-803-8701 or j.hunter@ieee.org

26 September, 2000
[Tuesday]
Low Bandwidth Voice Over IP Communications
Sponsor: Communications Society
Speaker: Mr. Eric Burger, Chief Scientist, Centigram Communication, Rockville, MD
Time: 6:00 pm
Place: TRW, Reston, VA
Directions: TRW Building at Reston Parkway and Sunset Hills Rd. From Dulles Toll Road, heading west from Tysons Corner, exit at Reston Parkway, move immediately to far left lane, turn left onto Sunset Hills and left into TRW parking lot.
Contact: seelig.fred@orbcomm.com

◆◆◆ DIAMOND STORIES ◆◆◆

Diamond Stories expand on calendar items with background information, abstracts and biographical sketches, or other information relating to the event.

WARC 2000 Results

Monday, July 24, 2000

Abstract: WARC 2000, held in Istanbul in May, had major developments in the areas of Planning the Broadcast Satellite Service in ITU Regions 1 and 3, IMT2000, and the time allowed to construct satellite systems. Mr. Locke will discuss agreements and implications.

Mr. Paul Locke, Senior Director, Systems Engineering and Spectrum Management, ORBCOMM Global, Dulles, VA, has been involved with satellite communications and both the national and international radio regulations for 30 years. He received a BSEE degree from Monmouth College and a masters degree from NYU. He worked as a NASA contractor for 14 years and has Been Vice President of Advanced Projects for Systematics General Corp. and Vice President of System engineering for Geostar. After consulting to TRW on the Odyssey "Big LEO" program for 2 years, he joined ORBCOMM, a "Little LEO" system, in 1992.

Data Base Design - Beginner Level Workshop

Saturday, July 29, 2000

This beginner-level workshop will be taught by an experienced instructor using Microsoft Access. Topics include basic concepts such as designing and modifying tables and forms; editing, filtering, and sorting data; using select queries; and importing data into reports.

Future workshops, presented by IEEE-NCAC as a member service, will cover intermediate-level topics, such as designing queries, preparing relational data bases, adding tools such as e-mail, and data transfer between Access and Excel. Advanced topics will include database programming.

Enhancing Your Web Site An Intermediate-Level Workshop

Saturday, August 19, 2000

The Web no longer lives by information content alone. We now need to make our pages attractive, with easy to read, compelling text and attractive graphics. This session will address the use of graphics, tables, and cascading style sheets to enhance Web pages. It will also address issues involved in electronic publishing.

This full-day workshop, offered jointly by IEEE-NCAC and the University of Maryland University College (UMUC), will be taught by Dr. Ferdinand Lazarus, a member of the Adjunct Faculty. Students will receive a certificate of completion from UMUC.

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Congressional Visits Day
Engineers' Technology Message Is Well Received

By Saj Durrani, Past Chair, NCAC PACE

This year the IEEE-USA again participated in a Congressional Visits program, which highlights the importance of science, engineering, and technology to the nation's prosperity and culminates in visits to members of Congress and their staffs to convey this message. This year the two-day event was held on April 4 and 5. It was a great success, thanks to the combined strength of the participating organizations, their advance planning, and the support of several important members of the administration and Congress.

The participating organizations included the Coalition for Technology Partnerships (CTP), which is a group of businesses and trade associations; and the Science, Engineering Technology Work Group (SETWG), consisting of professional societies, universities, and higher education associations. Their combined membership represents a large and powerful constituency, which lent credibility to its message and opened many doors.

Advance planning included the preparation of information packages for volunteers, material to be handed out during the visits, and arrangements for various briefing sessions and other functions. Debbie Rudolph of the IEEE-USA staff was one of the main coordinators.

More than 300 volunteers attended briefings on the first day and visited various congressional offices on the second day. The IEEE was represented by a 20-member contingent, including President Bruce Eisenstein, Region 2 Director Joe Kalasky, NCAC Chair Don Rickerson, several other NCAC members and some current and past directors of IEEE-USA.

The first day's briefings included a star-studded session hosted by Dr. Neal Lane, the President's Science Advisor, during which Dr. Rita Colwell, Director of the National Science Foundation, and senior officials from the departments of Defense and Energy spoke about their programs support for research and development in science and engineering. Another briefing, led by Taffy Kingscott of IBM (representing CTP) and Debbie Rudolph, discussed the protocols for congressional visits, and included an "Insiders' View Panel" comprising senior staff members of congressional committees on commerce and science. The day ended with a reception in the Hart Senate Building, where Rep. Bill Frist and Sen. Jay Rockefeller were presented with George Brown Science, Engineering, and Technology Leadership Awards.

The second day began with a breakfast briefing by Rep. Curt Weldon, Chair of the House Subcommittee on Military Research and Development (a part of the House Armed Services Committee). Some of us then attended an exhibit on the Advance Technology Program (ATP) in one of the Senate office buildings, sponsored by the National Institute of Science and Technology. The exhibit showed the remarkable accomplishments of joint projects by a number of companies and universities initiated with modest funding by the ATP, thus highlighting the value of such investment.

For most of the second day, the volunteers formed small groups to meet with representatives and senators and their staffs. The IEEE contingent separated into three groups, coordinated by Debbie Rudolph and Raymond Paul of IEEE-USA staff, and by Sally Rood, executive director of a sister organization, the Federal Laboratories Consortium. (I was part of the group led by Dr. Rood, and was impressed by the patience and tact with which she handled a bunch of us independent-minded engineers.) We met with staff members of three senators, (Paul Sarbanes and Barbara Mikulski of Maryland and Diane Feinstein of California), and with Rep. Roscoe Bartlett of Maryland's 6th District. The meeting with Rep Bartlett was especially interesting, because he is a retired professor who had worked on some early space projects at the Johns Hopkins Applied Physics Lab, and he regaled us with his stories. (Incidentally, he very graciously agreed to speak at one of our events; if you want to invite him, please contact Sallie Taylor in his office at 202-225-2721.)

The core message we presented in our visits was two-fold: "Balanced federal investment in science, engineering and technology is fundamental to the future of our nation's prosperity," and "Science, engineering, and technology partnerships between government, universities, and industries mean progress, economic growth, and jobs." We also used talking points from our information packages to make specific suggestions for a couple of bills dealing with matters of R&D funding and R&D tax credits that were pending in the House or the Senate, and left some handouts with staff members.

We were very pleased by the warm reception and courtesy accorded us by the congressmen and senators we were able to meet with, and by all of the staff members we met. We hope our visits will pay off when issues of interest to us come up for a vote in the committees or in the full House or Senate. And we hope more volunteers will come forward for the Congressional Visit Days next year.

Participants included Roscoe Bartlett, Representative for Maryland 6th District, (left), Sally Rood, Federal Lab Consotia; and Sajjad H. Durrani. Volunteers also met with Rep. James Sensenbrenner, Jr. (R-WI), the chairman of the House Science Committee.

Pictured from left: Robert Noberini, Don Rickerson, Rep. Sensenbrenner, Ned Sauthoff, unidentified, Mark Pullen, and George McClure.

TRIP REPORT
Celera Genomics Tour Is a Huge Success!!

Nearly 100 people showed up on 20 May, 2000 to take part in the tour of Celera Genomics sponsored by IEEE Washington Section and the Engineering in Medicine and Biology Society (EMBS). Celera hopes to become the definitive source of genomic and related medical and agricultural information and to achieve this, Celera has built a state-of-the-art sequencing and computing center in Rockville. Tour participants heard a presentation from Paul Gilman, Celera's Director of Policy Planning, then took walking tours of the sequencing labs and the computer center.

Because of the large number of people, arrival times were staggered and the participants split into three groups. Celera employee volunteers enthusiastically shared their knowledge at each of the tour sites, and the visitors left with overwhelmingly positive impressions. Tidbits shared with the group included trivia about the volume of raw data generated per day (about 45GB) and a copy of an electro-pherogram. One suggestion from the participants for future activities was a lecture series about genomics and engineering applications in the genomics industry.

For general information about Celera Genomics, please visit the website www.celera.com.

Don Rickerson (right) presents an NCAC award to James Allen.

The Northern Virginia Section: Vince Williams, Northern Virginia Section Chair; IEEE President Bruce Eisenstein; awardee Lisa Evers; Rep. Connie Morella; and Thom Tullia.

BANQUET
continued from page 1

engineering student members, who are the future of our nation. Ms. Jenny Sri, President of IEEE Student Chapter at George Washington University, served as mistress of ceremonies.

High school science project winners from high schools in Montgomery County, Prince Georges County, Prince Williams County, and Osborne High School were honored. During the social hour that preceded the banquet, several of the student awardees presented their projects and answered questions.

The IEEE honored seven newly elected fellows NCAC, the Washington Section, and the Northern Virginia Section also presented awards.

Among those present to receive the Third Millennium award medals were Jeffery Payne, CEO of Reliable Software Technologies; Gerald Borsuk, Superintendent of Electronics Science & Technology at the Naval Research Labs; John Derrick, CEO of Pepco; James Moore, Chairman of the IEEE Standards Board, REVCOM; Kenneth Rogers, former Commissioner of the U.S. Nuclear Regulatory Commission; and A.E. Williams, vice-president of Comsat.

The Third Millennium medals were awarded to individuals whose outstanding contributions made a difference to the engineering profession and to the world in general. Worldwide, the IEEE presented 3000 individuals with Millennium Medals. On one side the medal reads, "In celebration of the Third Millennium," on the other side, it reads, "The IEEE awards this Third Millennium Medal to (name of the recipient is inscribed on the medal) in 2000 for outstanding achievements and contributions."

THE WHITE HOUSE
WASHINGTON

April 13, 2000

Warm greetings to all those gathered in Bethesda, Maryland, for the Year 2000 Awards Banquet of the National Capital Area Council of the Institute of Electrical and Electronics Engineers. I am delighted to congratulate the distinguished engineers whose professional achievements have earned them millennium medals.

As we stand at the dawn of a new millennium, we recognize that much of our nation's progress and prosperity is due to the efforts of our engineers. Virtually every product, tool, and system we use each day owes its existence to the careful work of an engineer. With a passion for discovery, engineers are creating a new world, where technology is overcoming ancient barriers of geography, distance, language, and time.

I salute the outstanding engineers whose work you are honoring at this year's banquet, and I thank each of you in the IEEE for all you do to make the lives of your fellow citizens safer, healthier, easier, and more fulfilling.

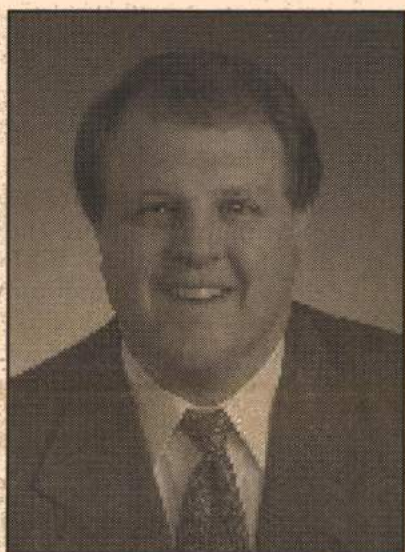Best wishes for a memorable evening and continued success in the years to come.

Bill Clinton

Jenny Sri, President of the IEEE Student Chapter at George Washington University, served as Mistress of Ceremonies at the awards banquet.

David Sosnowski won one of the science fair awards with his project, Flat surface Exploration Robot.

Two Are Among Local IEEE Millenium Medal Awardees

Jeffery E. Payne

Jeffery E. Payne is the president, CEO, and cofounder of Reliable Software Technologies (RST), providing software risk management methodologies, services, and support in g technologies to help companies address reliability, security, and safety concerns in building software. Under his direction, RST has grown 300-fold since its inception in 1992, and is listed as one of the fastest growing companies in the Washington, DC, area. RST was recently named to the Inc. list as one of the fastest growing private companies in the United States.

Mr. Payne developed and implemented the business philosophy and culture that allowed RST to go nearly 6-1/2 years without losing a technical employee. RST was recently awarded an Arthur Andersen Fast Track Best Practices award for its ability to motivate and retain its high-tech staff.

In succession, Mr. Payne built RST's research, consulting, and products divisions. The growth in the areas of research and consulting services has been unprecedented. Mr.Payne now focuses on the expansion of his vision of software risk management.

Mr. Payne is recognized as a visionary leader in software risk management methodologies. The company's consulting services are purchased by a host of Fortune 500 firms and software organizations. Companies that rely upon RST to assure the reliability and security and safety of their software include Visa International, GE, Motorola, Netscape, Microsoft, Siemens, Nortel, Lucent Technologies, AT&T, Boeing, AmericaOnline, Foxboro, Thomson, Oracle, Informix, MicroStrategy, and Novell.

Mr. Payne is a recognized expert in software assurance techniques and issues. He has published more than 30 papers and given more than 50 invited lectures in the areas of software testing, reliability, quality, safety, and security. His business expertise has been highlighted in the *Washington Post*, the *Washington Business Journal*, on First Business TV, on PBS on World Business Review, and in Arthur Andersen's Knowledge Space online periodical. Mr. Payne has been a featured speaker at regional business events over the past several years.

Mr. Payne holds an M.S. degree in computer science from the College of William and Mary and a B.S. Degree in computer science from Allegheny College. He is a member of the Association for Computing Machinery (ACM) and the Institute of Electrical and Electronic Engineers (IEEE).

Mr. Payne has served as a National ACM Lecturer, lecturing to college students about software technology issues. He is also cofounder and former chairman of the Northern Virginia Chapter of the IEEE Computer Society.

Mr. Payne received the IEEE Millennium Medal for his technical leadership and vision in software risk management methodologies.

A. E. Williams

Dr. A.E. Williams is vice president and chief engineer of COMSAT Laboratories. He is responsible for technology development and system studies related to communication satellites. From 1966 to 1969, Dr. Williams was a lecturer in the Department of Electrical Engineering of the University of Western Australia. In 1969, he joined COMSAT as a member of the technical staff in the Satellite Transponder Department.

Dr. Williams has been a major contributor to the development of dual-mode microwave filter technology that was first used on INTELSAT IV-A satellites and is now standard for all channelizing filters on communications satellites. He has also made significant contributions to several INTELSAT/Inmarsat satellite programs in system analysis and the design of communications payloads.

In recent years, he has led the COMSAT Laboratory team studying the concept of voice and data communications between satellite and mobile handheld terminals. This work has involved the in-depth study of systems proposed by Iridium, Globalstar, and Odyssey together with independent system work in support of the Inmarsat Organization's Project 21 system. These studies have included detailed evaluations of the technical and financial tradeoffs of the three competing satellite constellations; LEO (low earth orbit), ICO (Intermediate circular orbit) and the GEO (geostationary orbit).

Dr. Williams received the BEE from University of Western Australia, Perth, in 1962; Ph.D., from University College, London University, in 1966, and the M.B.A. degree from George Washington University, in 1990.

Dr. Williams is a Fellow of IEEE, and has served as a session chairman for many MTT Society Conferences. He is immediate past chairman of the MTT-8 Subcommittee on Microwave Network Theory. In 1966 he was a joint recipient of the IEE (London) Sylvanus P. Thompson Premium Award and in 1984 a joint recipient of the COMSAT Research Award. In 1997 he was awarded the IEEE Microwave Theory and Techniques Society Pioneer Award. He has published more than 50 technical papers and has been awarded five U.S. patents.

Dr. Williams received the IEEE Millennium Medal for developing the dual mode cavity filter for application to communication satellites.

From the President, IEEE-USA

IEEE To Combat Age Discrimination

By Merrill W. Buckley, Jr.
2000 President,
IEEE-United States of America

In this, the second of the monthly "From the President" series, I want to focus on age discrimination. Mark Twain said that when he was 15, he thought his father was the most ignorant man on the face of the earth. So he ran away from home to work on a Mississippi steamboat. He returned at 25, and was "amazed to find out how much the old man had learned in 10 years."

Too much of the discussion about age discrimination in our profession misses Twain's point. I hear it all the time—older electrical engineers' skills are out of date, their salary demands are too high, IT workers as young as 35 want a life outside the job so they are not as "reliable" as younger workers.

As the U.S. career services and public policy arm of the IEEE, with 230,000 U.S. members to represent, we are working to counter these false impressions. Our ongoing efforts on behalf of older members include:
- IEEE-USA's Older Workers Initiative, begun by 1999 President Paul Kostek http://www.ieeeusa.org/bod/kostek/opi/index.htm;
- the Age Discrimination page on our Website http://www.ieeeusa.org/EMPLOYMENT/age.html;
- the Older Workers Survey that is now in the field, with results due in June .

Engineering is not a throwaway career

But why should younger IEEE members care about age discrimination? Consider what those who deny the serious evidence of age discrimination, particularly in IT, are really saying. I don't believe that as a group, older engineers have failed to keep up their skills. We all know that, as Twain might have put it, book learning isn't the same as job experience. Our profession changes so fast that, because we are a profession, being an electrical engineer means that you have to stay current to survive. What those who claim that older workers must be out of touch are really saying is that the IT industries are a short career. Get in at 25, get out by 40, and do something else for the rest of your life. If you can.

That is where the IEEE-USA, your advocate, comes in. We don't accept that our profession is a throw-away career. We believe continual improvement is vital. And we know that the value an engineer adds to our economy and our society grows with experience.

Those who have now turned 40, 50, or older have the immeasurable benefit of keeping their skills current through one of the most profound periods of accelerating technology in history.

Those who are 29 today will be 39 and 49 a lot sooner than they might think. Programmers whose newly minted skills are in Java and Linux might keep in mind that, 20 years ago, the newly-minted skills were C and C++. What happened to COBOL and Fortran will happen to Java, too, and the same arguments might be heard again. "Y2K graduates with computer degrees are out of date," someone may claim in 2020. "Nobody does Java anymore, and Linux has moved parsecs since the invention of Digital Oxygen. We need younger workers who can do voice-response programming in Chinese."

Twain was right: if these changes occur, some who deny the obvious evidence of age discrimination now will be amazed to discover how far ahead of its time IEEE-USA was. But we're not going to let that happen, because we're already fighting for older workers—and younger ones—right now.

To view the IEEE-USA President's Column on the Web, and for more information, go to: http://www.ieeeusa.org/intro/buckley/index.html.

Nominations for IEEE Washington Section Due in July

Nominations for IEEE Washington Section officers are due by July 17 so that the roster and biographies can be published in the September issue of the *Scanner*. Section elections will be held on the first Tuesday in November (2 November 2000) at the Washington Section meeting (Pook's Hill Marriott, 6 p.m.). Please submit your nominations to the Nominations Committee, via Satish Aggarwal, Chair, at sa@ieee.org or 301-415-6005, or to Catherine Jordan, cmj@ieee.org or 240-453-3037, or fax them to 240-453-3324, attn: Catherine Jordan.

BOOK REVIEW

Software Safety and Reliability

By Debra S. Herrmann, IEEE Computer Society Press, 1999

Reviewed by Ed Gordon

Debra Herrmann has been concerned with software safety and reliability for over 20 years, and is considered an expert in the subject. Her research and practice in these areas have led her to publish *Software Safety and Reliability*, the first book dedicated solely to this topic within the industry.

The so-called Y2K bug dramatized the importance of long-term considerations in software design. The issues are relevant throughout the industry, but especially to mission-critical systems.

The book begins with an introduction to the concepts of software reliability and safety and goes on to discuss the basic criteria for producing a system that fulfills the project needs while addressing safety and reliability considerations. In the next section, Herrmann defines the industries that are the focus of her discussions: the transportation, aerospace, defense, nuclear power, and biomedical spheres.

The third section of the book focuses on the standards and standards groups that should be taken into consideration while developing software. These include the IEC Software Dependability Standards, the IEE SEMPLC Guidelines, ANSI/IEEE 982.x, and IEEE 1228.

The IEC standards concern safety integrity levels, functional safety, and their assessment. The SEMPLC concerns safety and reliability with respect to programmable logic controllers. The ANSI/IEEE 982 standards are concerned with the metrics for measuring progress toward achieving software safety and reliability within the scope of the development lifecycle. The IEEE 1228 standard addresses the definition of a model from which development proceeds.

The book is well written and should you be working in the area of software development, it would be a welcome addition to your library.

From the Chairs:

Message from the NCAC Chair

Boy, how time flies and things change.

We are halfway though the year already and still have a lot to do. As you have noticed there is a change in the *Scanner* format. We needed to do more cost-effective. The tabloid format gives us more flexibility. We can now print fuller stories and include more of the IEEE area happenings.

We have begun offering short professional development courses. We have scheduled more classroom courses, one on Base Design (29 July), and one on Enhancing your Web Site (19 Aug). These will be low-cost courses. If you have any suggestions for other courses, please tell us.

This fall we are sponsoring an on-line course, How the Internet Works for the Engineer, offered by Dr. Mark Pullen of George Mason University. We are looking for two evening dates to hold the two-hour on-line interactive presentations. (See page 10.)

I hope you'll try this new method of learning and give us your opinion. There is a lot of talk about using the Internet as a learning tool. Let's see how it really works.

As with each year we need to think about awards. We need to start early to reward those who have accomplished so much. We need your nominations for the awards for National Engineers Week, the NCAC Annual Awards Banquet, professional development, and other IEEE awards. All these events will be here again soon. We will be happy to assist you in completing the nomination.

New officers and directors are needed at all levels. Both sections and the NCAC need four to five new volunteers each year to keep the positions filled. These range from directors who help look after chapter activities to Web masters and Scanner editors. Each one plays an important part in keeping a volunteer organization running smoothly. If you can afford one night a month and some hours during the days please consider volunteering.

Don Rickerson

Message from the Washington Section Chair

Happy Fourth! Although it's barely mid-summer, it's time for us to think about the coming year. In the next four months the Washington Section will be seeking nominations for new officers, holding elections, approving new bylaws, and planning the budget and activities for 2001. What are you doing?

MESSAGE FROM THE EDITOR

Welcome to the *Scanner* in its new format. I would like to thank everyone who worked on the transition. It has not been easy, but the cost of the Scanner has been reduced significantly and we now have much more flexibility in layout and a more inviting format for our news items.

The format is still evolving and we and most interested in your comments. What are we doing right? How can we improve? How can we use the flexibility to make the *Scanner* more readable? Please send your comments to wjkelly@ieee.org.

One of the primary goals for this change is to shorten our production cycle to make the *Scanner* information more timely. This article is being written six weeks before the *Scanner* is delivered. We want to close that long lead time.

In the next issue I expect to give you a better summary of the changes. In the meantime, please enjoy the new format, take advantage of the events in the calendar, and mention the *Scanner* when you patronize our advertisers.

If you are active in a technical society, we hope that you will join us in planning for coming events. If you are not currently active, perhaps you would like to have some input to the Section. I can promise you that this is a group where every voice matters!

There are several activities that I would like to bring to your attention. One is the IEEE Professional Development Conference, held over Labor Day weekend in sunny Scottsdale, AZ. (see http://www.ieeeusa.org/PRODEVCON/). ProDevCon is a great opportunity for you to explore how you can contribute as a local IEEE volunteer. It also provides lots of opportunities for networking and career management. Another event that is fast approaching is Sections Congress 2002, which will be held in October 2002 here in Washington, D.C. While it might sound a long way away, I can assure you that literally hundreds of opportunities exist now for volunteers, to showcase the city and our section to other IEEE leaders and volunteers from around the world.

I invite you to consider the many opportunities for volunteering with the IEEE.

Catherine Jordan

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Input Sought on Fall Tutorials

NCAC is organizing a series of tutorials this fall and winter. The first such tutorial, in late September or early October, will be offered by Dr. Mark Pullen of George Mason University, who will discuss the use of the Internet as a resource: "How the Internet Works for Engineers."

This course will be presented synchronously on-line. In other words, the instructor will present the course on the Internet at a specified time; students will access it from their homes or offices through a CD and a high-quality line (arranged as part of the course), and will be able to interact with the instructor on-line.

The on-line course will be presented in two sessions, on workday evenings one week apart. Each session will run for two hours.

We would like your input on the following: (1) are you interested in such a course, and if so (2) what is your preferred weekday and time: 6, 7, or 8 pm. (Dr. Pullen is not available Monday evenings.) Please send your preference to Saj Durrani, s.durrani@ieee.org, by July 18 so that the date and time can be published in the next issue of the Scanner.

Additional Course Planning

We have already chosen some additional topics, including "Java-based Computer Graphics and Animation" and "Satellite Communications." We anticipate that a typical course will be offered over 4 to 8 hours, (2 hours per evening, on two to four evenings, or on a Saturday, depending on your preference). The site will normally be a local university. We need your help to plan these courses. Please take a few minutes to answer the following questionnaire

and send your replies to Saj Durrani, s.durrani@ieee.org.

Questionnaire

1. Topics. What topics are of special interest to you? Please list two, in order of priority.

2. Schedule. What day and time period do you prefer? Assume the course will run for two hours each evening, for two or more evenings, or on a Saturday.

Weekday evenings: Please state preferred day.

Time: starting at, 7, or 8 pm.

c. Saturdays. (Time would be approximately 9 am to 5 pm.)

d. No preference

3. Format. Some courses will be given by the instructor on-line, so students can participate from their offices or homes. Other courses will be offered in a traditional classroom setting. Please indicate your preference.

a. I would be interested in taking an "on-line" course.

b. I would be interested in a traditional classroom setting only.

c. I have no preference.

4. Cost. We intend to keep the fees as modest as possible by inviting instructors who are willing to teach without charge as a service to members. This is not always possible, however, and there are costs for using university facilities. Please indicate the amount you are willing to pay, assuming that the course is of interest to you.

a. I am willing to pay $ 120 for an 8-hour course, which includes the use of a computer lab.

b. I would prefer a shorter course (without lab), for 4 to 8 hours, for $60-$80.

Additional comments are welcome; thank your for your help.

Begnini Reports to NCAC members on Region 2 Meeting

When Vice President of the Regional Activities Board (RAB) Antonio Bastos cannot attend a region meeting this year, he has asked me to cover it on his behalf. In each instance, he has asked me to prepare a written report on the meeting's activities, in order to share the information with all RAB members.

Washington Section Chair, Catherine Jordan, asked me to share my report with all of you.

As requested by Vice President Antonio Bastos, I attended the Region 2 meeting on his behalf. VP Bastos prepared remarks for me to give at the meeting. I read aloud his message, and provided a copy in written form for all attendees and for the minutes of the meeting.

Since the Region 2 meeting lasts for only one day, there was only time for me to cover the highlights on a wide variety of topics of interest, including RAB, Sections Congress 2002, and RAB Nominations and Appoint-ments.

Reports by Region 2 committee chairs and section chairs, and actions by Chair Kalasky of broad interest to other RAB members were the following:

1. Mr. Joseph Kalasky is going to implement a region Senior Planning group consisting of past region directors willing to serve, and chaired by the most recent past chair. The idea is to do long range planning for the region.

2. The region passed a deficit budget, which raised strong concerns from the members of the committee. In future, information regarding budgets and past performance to budgets will be provided. In addition, this is an item that will be of concern to the newly formed senior planning group.

3. The region had four strong candidates for the office of Director-elect for the upcoming election this fall, and decided on two candidates: Moshe Kam from the Philadelphia, Pa. section, and Jim Burghart from the Cleveland, Ohio section.

4. Most sections seem to be changing to the Calendar year as mandated by RAB, and are in-progress on updating their section bylaws to conform to the changes in the RAB bylaws and operations manual.

5. Some sections are implementing very active Life Member committees.

6. Mr. Kalasky has formed a Region 2 Industry Relations program. The initiative is to find ways to help local IEEE entities establish and maintain relationships between sections and technical society chapters and the organizations, executives, and managers who employ IEEE members and prospective IEEE members. The position description of the Chair of this committee is: to become an advocate for promoting services and resources of employee IEEE membership to industry employers; to employers who support (financially and otherwise) employee's IEEE professional development among and between each of the Region 2 sections; and to share and review related activities/programs with other IEEE regions in order to standardize the overall approach.

7. The Membership Development committee chair outlined how SAMIeee can be used, with COTS software, to perform demographic studies concerning where members reside and work, that can be broken down to chapter affiliation as well. It could be used in a variety of ways, such as helping sections and chapters in deciding on where to hold meetings where there are concentrations of members. SAMIeee database can also be used in sending welcoming letters to new members, sending letters of congratulation to members who have been upgraded to senior membership, etc.

8. Sections reported the importance of holding some of their meetings on campuses to allow for better interaction with local student branch volunteers.

9. Issues/Problems:

a. Newsletter costs and the process of switching from paper to electronic form.

b. Finding new volunteers for section positions.

c. Need for better and more communication and support from the region to sections.

d. How to reach members, both new and those moving into the area.

e. The need for better outreach to and cooperation with local, small business community.

I was as always extremely impressed with the level and breadth of activities carried out by local sections and chapters, by the good relationships with student branches, by the level of services provided to local members.

It was a pleasure to attend the meeting on VP Bastos' behalf.

Dan Benigni
RAB Past Chair

Off to the Science Fair

High School Science Fair Judging Is Hard Work in a Good Cause

By Don Rickerson, NCAC Chair

The IEEE is encouraging its engineers to participate in local science fairs so that high school students can start to see and meet real engineers before they begin making career decisions. Being a judge at a science fair is a chance to influence students who have shown an interest in the sciences. Here is an account of my recent experience as a science fair judge.

The competition starts in February at local schools. Top winners in the various categories progress to the county or regional science fairs, and those winners progress to state and higher levels, all in a period of a couple months. The competition grows exponentially tougher with each advance in level.

I found the place that judges are most needed is at the local level, at the local schools. At higher levels there seem to be scores of judges from every organization imaginable who give out prizes. At my local high school, for example, there were perhaps 50 student exhibits and 20 judges. All judges were assigned as a category judge due to the shortage of category judges. At the county level there were perhaps a hundred students exhibiting, but there must have been a hundred judges, too.

The exhibits are broken out into the standard disciplines, i.e., math, computer science, physics, biology. The exhibits sometimes cross disciplines, and as an organizational judge, such as for an IEEE prize, you have to decide yourself which ones fit. Many categories are easy fits, but others are harder calls, such as a chemistry exhibit that tests electrical conductivity. You really have to do a quick scan of all exhibits to make sure you include the appropriate ones from each category.

After selecting all the exhibits that should be included in judging for your organization, I found it best to do two rounds of judging, the first to determine those good enough for a second look, and the second round to look hard for discriminators for those who should get a prize or honorable mention. Then we haggled over who gets which prize.

The grading criteria have been pretty well laid out with standard grading sheets, so simple numeric scores are easy to make. But where the real judging came was deciding if the student "set the bar too low," that is took an easy project and did a good job at it, compared to a student who was reaching higher and made mistakes. Do we punish those who push their envelope? Well, you be the judge.

Getting into a science fair as a judge is not as easy as it would seem, especially at the local level where they really need them. You must find out who is the assigned teacher for that duty that year at a school and try to contact him or her to express your interest and explain

what the IEEE is about. Start in the fall after the school year starts, when various extra duties are doled out to the teachers. Plan on it taking weeks to get hold of the right person. Remember that this is one of the many jobs teachers have in addition to teaching. A couple weeks before the fair, they will try to send your invitation out. Fill it out and return it and you are in. You are now on the mailing list forever.

After you have done the judging for your organizational prize, make sure to get the names and address of the winners while you are there. Don't make any extra work for the poor science fair teacher to have to go looking up addresses and phone numbers for you. They have a pile of forms to fill out after the fair (in addition to their teaching jobs).

Make sure to follow through with your prizes, ensuring that the list of winning students is submitted to the section or council and the letters and prizes are sent.

Overall, this was a rewarding experience. The schools and teacher are grateful for the help and do a good job organizing the fairs. The students try very hard, standing there for hours explaining their exhibits to the many judges who stop by. It is well worth the few hours it takes and benefits your community as well as the engineering profession.

New Life Member Chapter Seeks Participation

By Dave Booth

The joint Northern Virginia-Washington Section Life Member Chapter heard George F. Rodgers discuss "An IEEE Experiment in Advanced High School Math Education" and elected Dave Booth chair and John Margosian vice chair at its second meeting held May 10.

The NCAC Life Member Chapter, established in March, is the second life member chapter to be formed in Region 2. There are more than 1200 IEEE Life Members in the National Capital Area Council, representing a wide range of interests and abilities. Although many are retired, they continue to serve in diverse useful ways, applying their technical skills locally. Many are staying technically up-to-date by taking courses in local colleges and involvement in Section Society Chapters.

We expect to hold Life Member Chapter meetings quarterly, usually as a luncheon. The next meeting is planned for September. We invite you to join us. We would be pleased to receive your input regarding speakers, topics, and activities. Contact me at dbooth@ieee.org.

Electron Devices Society Meets Regularly in Northern Virginia

The Northern Virginia Chapter of Electron Devices Society (EDS) holds regular meetings in the Northern Virginia area, usually at George Mason University. The schedule for rest of 2000 has not yet been finalized but the meeting notices are sent electronically to the EDS members in the database.

Meeting information is also posted on the chapter's web page at http://ewh.ieee. org/r2/no_virginia/eds/and also on the main EDS web page, athttp://www.ieee.rg/organizations/society/eds/.

If you would like to be placed on the distribution list for the meeting notices, please send a note to the Chapter Chair, Murty Polavarapu at mpolavar@ dominionsc.com.

The other chapter officers are Michael Hurt (vice chair) and Gyorgy Porkolab (secretary).

Hard copy distribution of meeting notices has been discontinued and we strongly encourage the EDS members who have not yet provided their e.mail information to do in order to receive meeting notices. The e-mail list is not used for any purpose than distribution of meeting notices.

13th Annual IEEE International ASIC/SOC Conference
SOC IN THE INTERNET AGE

September 13-16, 2000
Hyatt Regency Crystal City, Arlington, VA
Sponsored by IEEE Circuits and Systems Society and IEEE Rochester Section

Dear Colleague,

On behalf of the Organizational and Technical Committees of ASIC/SOC 2000, we cordially invite you to participate in the 13th Annual IEEE International ASIC/SOC Conference in Washington, DC. For the last twelve years, this conference has been a forum for education and dissemmination of new ideas related to the ASIC and SoC community.

The 2000 ASIC/SOC Conference theme is "System-On-Chip in the Internet Age" Driven by the rapid growth of the Internet, communication technologies, pervasive computing, and consumer electronics, Systems-on-Chip (SoC) have become a key issue in today's electronic industry. The transition from the traditional Application-Specific Integrated Circuit (ASIC) to SoC has lead to new challenges in Design Methods, Automation, Manufacturing, Technology and Test.

The following program items will assist you in updating your professional skills to stay competitive in today's rapidly changing working environment.

Keynote Speaker

- **John E. Kelly Jr.**
  General Manager,
  IBM Microelectronics
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Other renowned Distinguished Speakers will share their views at the Plenary Session and the Luncheon.

Please watch our website for updates.

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