

# Nuclear & Plasma Sciences

Number 2 • June 2007

SOCIETY NEWS

## CONFERENCES

### NUCLEAR AND SPACE RADIATION EFFECTS CONFERENCE NSREC 2007 Honolulu, Hawaii July 23-27, 2007

The 2007 IEEE Nuclear and Space Radiation Effects Conference will be held July 23-27, 2007 in Honolulu, Hawaii, at the Hilton Hawaiian Village. The conference features a Technical Program consisting of ten sessions of contributed papers, both poster and oral, which describe the latest observations and research results in radiation effects, an up-to-date Short Course offered on July 23, a Radiation Effects Data Workshop, and an Industrial Exhibit. Lloyd Massengill, Vanderbilt University, is General Chair.

This year's conference will be held July 23-27, 2007, at the Hilton Hawaiian Village Resort on beautiful Waikiki Beach in Honolulu, Hawaii. A complete technical and social program is being planned to maximize opportunities for information exchange and networking in the area of radiation effects on microelectronic and photonic devices, circuits, and systems. Supporters of the conference include the Defense Threat Reduction Agency, Sandia National Laboratories, Air Force Research Laboratory, the NASA Electronic Parts and

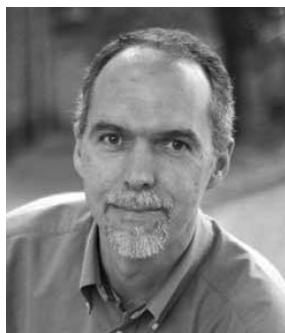
Packaging Program, NASA Living With a Star Program, and the Jet Propulsion Laboratory. NSREC also has new corporate supporters: BAE Systems, Boeing, Micro-RDC, Honeywell, ST Microelectronics, and Aeroflex Colorado Springs. Additional information on the conference is available on the Web at <http://www.nsrec.com>.

#### TECHNICAL PROGRAM

The Technical Program Chairman, John Cressler, Georgia Tech, and his program committee, have assembled an excellent set of contributed papers that are arranged into nine sessions of oral and poster papers and a Radiation Effects Data Workshop. The Workshop consists of papers emphasizing radiation effects data on electronic devices and systems and descriptions of new simulation and radiation test facilities. In addition, there are three outstanding invited talks of general interest to both conference attendees and their companions.

Attendees will have the opportunity to participate in a one-day Short Course on Monday, July 23 enti-

*continued on page 3*



**Lloyd Massengill**  
General Chair



**John Cressler**  
Technical Program  
Chair



**Hugh Barnaby**  
Short Course Chair



**Susan Crain**  
Local Arrangements  
Chair

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Publicity releases for forthcoming meetings, items of interest from local chapters, committee reports, announcements, awards, or other materials requiring society publicity or relevant to NPSS should be submitted to the Newsletter Editor by July 16, 2007.

### CONTRIBUTED ARTICLES

News articles are actively solicited from contributing editors, particularly related to important R&D activities, significant industrial applications, early reports on technical breakthroughs, accomplishments at the big laboratories and similar subjects.

The various Transactions, of course, deal with formal treatment in depth of technical subjects. News articles should have an element of general interest or contribute to a general understanding of technical problems or fields of technical interest or could be assessments of important ongoing technical endeavors.

Advice on possible authors or offers of such articles are invited by the editor.

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tled *Hardened Electronics for Tomorrow's Radiation Tolerant Systems*. Chaired by Hugh Barnaby, Arizona State University, this Short Course is an excellent learning opportunity for those who are new to the radiation effects community and need a quick introduction to the field, as well as those who want to stay abreast of current issues. The Short Course will start Monday morning with tutorials on *Process Technologies and Hardening and Radiation Effects and Mitigation Strategies on Digital ASICs and FPGAs*. Monday afternoon will include tutorials on *Radiation Effects on Analog Integrated Circuits and Extreme Environment Design*, and Radiation Hardening at the System Level.

### INDUSTRIAL EXHIBITS

This year's sold-out Industrial Exhibit will feature the leading suppliers of radiation hardened products, related materials, and services. The Industrial Exhibit permits one-on-one discussions between exhibitors and conference attendees on the latest in radiation-hardened electronic devices, radiation analysis and test services, and radiation test facilities and test equipment. If you need more information on the exhibit, please visit [www.nsrec.com](http://www.nsrec.com) or contact Barry Templeton, the 2007 NSREC Industrial Exhibits Chairman.

#### Exhibitors include:

- 3D Plus - USA
- Actel Corporation
- Aeroflex Colorado Springs
- BAE Systems
- Boeing - Phantom Works
- Crane Aerospace & Electronics
- Cyclotron Institute, Texas A & M University
- Defense Microelectronics Activity (DMEA)
- Honeywell
- ICS Radiation Technologies
- Idaho Accelerator Center
- Indiana Univ. Cyclotron
- International Rectifier
- Intersil Corporation
- J.L. Shepherd & Associates
- Jazz Semiconductor
- JD Instruments
- Maxwell Technologies
- MBDA
- Micro-RDC

- Modular Devices Inc.
- NASA Goddard Space Flight Center
- National Semiconductor
- Northrop Grumman Corporation
- Orora Design Technologies, Inc.
- Peregrine Semiconductor Corp.
- Prairie View A&M - NASA Center for Applied Rad Research
- Radiation Assured Devices
- Sandia National Laboratories
- Silvaco International
- Survivability, Vulnerability, & Assessment Directorate
- Synopsys
- Synplicity, Inc
- US Semiconductor Corp.
- Vanderbilt University - Institute for Space and Defense Electronics
- VPT, Inc
- Xilinx

### SOCIAL EVENTS

Social events have been planned to give Conference attendees and their guests many opportunities to discuss informally radiation effects and to become better acquainted. Susan Crain (The Aerospace Corporation), this year's Local Arrangements Chairman, has planned an extraordinary social program. The main conference social on Wednesday night will be an unforgettable visit to the Paradise Cove Luau. Attendees and guests will enjoy island activities, an oceanfront dinner, and a spectacular show on the leeward coast of O'ahu. In addition, we have planned two companion tours during the day on Tuesday and Thursday, each with its own Hawaiian Island theme.

#### Honolulu, Hawaii

NSREC will be held at the Hilton Hawaiian Village Resort. We are quite confident you will have an 'olu'olu (wonderful) time at this world-renowned, award-winning resort situated directly on the beach at Waikiki. The city of Honolulu has something for everyone, from the history buff to the cultural connoisseur to those desiring dining and dancing after a busy conference day. The island of O'ahu is no less diverse, with eco regions ranging from sandy beaches to rocky volcanic mountains to tropical rainforests to lush agricultural plains – all within a short drive. There will be culture, history, and excitement for the whole family.

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## Cause and effect

We don't stop playing because we grow old; we grow old because we stop playing.

George Bernard Shaw

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## Top secret

Statistics are like bikinis. What they reveal is suggestive, but what they conceal is vital.

Aaron Levenstein

## INVITED SPEAKERS

Dr. Rolf-Peter Kudritzki, the Director for the Institute for Astronomy at the University of Hawaii, will be speaking on *Astronomy in Hawaii*; Mr. Cy Bridges, the Director of Culture at the Polynesian Cultural Center, will be speaking on *Polynesian History, Mythology, and Culture*; and Dr. Patricia Fryer, Professor of Marine Geology and Geophysics in the School of Ocean and Earth Science and Technology at the University of Hawaii, will be speaking on *Volcanism in Hawaii*.

## ADDITIONAL INFORMATION

For the latest NSREC information (technical program, conference & social registration forms, hotel and travel information, etc.) please visit our web site at [www.nsrec.com](http://www.nsrec.com).

You may contact the General Chair, Lloyd Massengill, Vanderbilt University at (615) 345-6677 or Email: [lloyd.massengill@vanderbilt.edu](mailto:lloyd.massengill@vanderbilt.edu).

Or you can contact the Publicity Chairwoman, Teresa Farris, Aeroflex, at (719) 594-8035; E-mail: [teresa.farris@aeroflex.com](mailto:teresa.farris@aeroflex.com)

22<sup>nd</sup> SOFE

# 22nd IEEE/NPSS SYMPOSIUM ON FUSION ENGINEERING 2007 (SOFE07)

Albuquerque, New Mexico, June 17-21, 2007

<http://sofe22.sandia.gov/>



**Dennis Youchison**  
General chair



**Michael Ulrickson**  
Program chair

The 22nd IEEE/NPSS Symposium on Fusion Engineering (SOFE07) will take place June 17-21, 2007 at the Albuquerque Convention Center in Albuquerque, New Mexico. The Symposium is dedicated to the scientific, technological and engineering issues of fusion energy research and presents a mixture of oral presentations and poster sessions allowing for extensive interactions among the participants. The conference is open to the public, and all individuals with an interest in fusion energy are invited to register and attend. This year the SOFE meeting is collocated with the International Pulsed Power and Plasma Science 2007 conference (the combined 2007 ICOPS and the 2007 International Pulsed Power Conference) that runs through June 22. Attendees registered with SOFE can attend any sessions of PPS2007 and will receive a pocket program for both SOFE and PPS as well as a full abstract book for SOFE. A grand plenary including both is planned for the first day.

The meeting is being organized by Sandia National Laboratories. The SOFE07 General Chair is Dennis Youchison. The Technical Program Chair is Michael Ulrickson. The organization of the technical program is similar to previous conferences in this series, with plenary sessions in the first part of each morning followed by a late morning session with oral invited and contributed presentations in selected technical areas. A poster session starts in the early afternoon, followed by an oral session to close the day.

Abstract submission for SOFE is now closed. Approximately 140 abstracts were submitted through the website. About 65 of these were from outside the United States.

Ten student papers were identified for evaluation in the best student paper search. Attendance at SOFE is projected to be 160 people. Authors were notified of paper acceptance and format requirements on April 30, 2007. Pre-registration closes on May 18, 2007. On-site registration begins Sunday evening, June 17, 2007 and is open through June 21. Several SOFE related exhibitors have joined the PPS2007 exhibition bringing the current number of exhibitors to 18. A cyber café will be available at the convention center for the attendees. The combined opening plenary on Monday morning will include presentations on the Sandia ZR upgrade and US engineering activities on ITER. Breaks and other events were programmed to coincide with PPS2007 activities. These include the Sunday evening reception, the companion program, and a Tuesday night out at the zoo, complete with food and entertainment. SOFE will host a unique southwestern banquet on Wednesday evening. The IEEE/NPSS Fusion Technology Award and a student award for best paper will be presented at that time.

The SOFE web site at <http://sofe22.sandia.gov/> is available for more information.

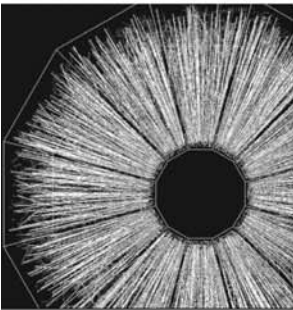
*Dennis Youchison, chair of the 2007 Symposium on Fusion Engineering, can be reached at the Sandia National Laboratories, P.O. Box 5800, MS-1129, Albuquerque, NM 87185-1129 USA; Phone: +1 505 845 3138; Fax: +1 505 845-3130; E-mail: [dlyouch@sandia.gov](mailto:dlyouch@sandia.gov).*

*Michael Ulrickson can be reached at the Sandia National Laboratories, P.O. Box 5800, MS-1129, Albuquerque, NM 87185-1129 USA; Phone: +1 505 845 3020; Fax: +1 505 845-3130; E-mail: [maulric@sandia.gov](mailto:maulric@sandia.gov).*

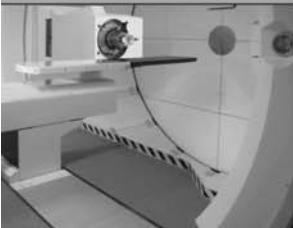
# IEEE NUCLEAR SCIENCE SYMPOSIUM and

# MEDICAL IMAGING CONFERENCE

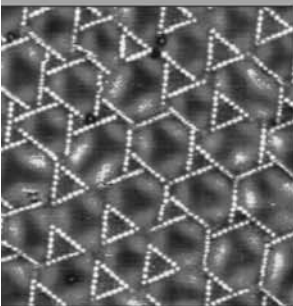
HAWAII 2007  
OCTOBER 28 - NOVEMBER 3



Aloha  
欢迎



ยินดีต้อนรับ  
ようこそ



환영합니다  
欢迎

## PROGRAM

- ◆ Plenary Sessions
- ◆ Oral Presentations
- ◆ Poster Presentations
- ◆ Topical Workshops
- ◆ Topical Short Courses
- ◆ Refresher Courses
- ◆ Industrial Exhibits
- ◆ Companion Program
- ◆ Pre- & Post-Conference Tours
- ◆ New Outreach Program to Asian-Pacific Participants

**nps** NUCLEAR &  
PLASMA SCIENCES  
SOCIETY



## TOPICS

Radiation Detectors, Electronics and Instrumentation and their Applications in Homeland Security, Space, High Energy, Nuclear and Solid-State Physics, Hadron Therapy

PET, SPECT, PET/CT, SPECT/CT, X-RAY CT, Multi-Modality Imaging Instrumentation and Methods, Small Animal Imaging, Image Reconstruction and Processing Techniques, Application-Specific Imagers and Techniques

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Johns Hopkins University

### NSS CHAIR:

Ren-Yuan Zhu  
California Institute of Technology

### MIC CHAIR:

Eric C. Frey  
Johns Hopkins University

### ABSTRACT SUBMISSION DEADLINE:

May 11, 2007

[www.nss-mic.org/2007](http://www.nss-mic.org/2007)

E-mail: [nss-mic2007@jhmi.edu](mailto:nss-mic2007@jhmi.edu)

HILTON HAWAIIAN VILLAGE  
HONOLULU, HAWAII, USA



# ICALEPCS 2007 - The International Conference on Accelerator and Large Experimental Physics Control Systems

October 15- 19, 2007  
Knoxville, Tennessee



## The 11th International Conference on Accelerator and Large Experimental Physics Control Systems

Oak Ridge National Laboratory • P.O. Box 2008 • Oak Ridge, TN, 37831-6477 • USA  
www.sns.gov/icaleps07 • icaleps07@sns.gov • October 15-19, 2007 • Crowne Plaza • Knoxville, TN



**David Gurd**  
*General Chair*

Large Experimental Physics facilities cannot operate without their control systems. As the size and complexity of these facilities grow, so too do the size and complexity of control systems and the demands and expectations on those systems. Using the newest computer and communications technologies, and always pushing the “state-of-the-art,” these systems are designed, built and commissioned by an international community of control system experts. After their meetings in Villars, Vancouver, Tsukuba, Berlin, Chicago, Beijing, Trieste, San Jose, Gyeongju and Geneva, those experts are poised to meet once again at the eleventh in the series of International Conferences on Accelerator and Large Experimental Physics Control Systems – ICALEPCS 2007 – in Knoxville, Tennessee, October 15 – 19, 2007. Between 250 and 300 are expected to participate. The Conference Chair is Dave Gurd, Controls group leader at the Spallation Neutron Source in Oak Ridge and the Program Chair is Karen White, project manager for instrumentation and controls for the Jefferson Lab 12 GeV upgrade project.



**Karen White**  
*Program Chair*

Following the tradition of previous conferences, ICALEPCS 2007 will focus on technologies and issues in the development of control systems for large experimental physics projects, including accelerators, telescopes, high-energy physics detectors, fusion devices (inertial and magnetic, but not cold) and space probes. The demanding requirements and growing complexity of many new projects currently planned or under construction around the world present new challenges in the controls field. These projects include the International Linear Collider (ILC), third and fourth generation light sources, huge new detectors for the Large Hadron Collider (LHC) at CERN, high intensity and heavy ion accelerators, fusion devices such as the National Ignition Facility (NIF) in the US and

Megajoule and ITER in France, as well as increasingly sophisticated telescopes and space probes. At the same time, the extremely rapid development of hardware, software and communications technology offers to the community an ever-changing variety of tools to address these challenges. All this is the subject matter of ICALEPCS.

Control system software toolkits, communication protocols, fieldbuses, feedback, timing and synchronization, data and database management, configuration management, high-level applications, the use of industrial controls, outsourcing, upgrading of operating facilities, computer and network security, model-based control and much more have been topics for presentation and discussion at meetings past. Many of the largest new projects will be built as national or international collaborations which presents particularly interesting challenges to the systems designed for integration – the control systems – and to their managers.

The meeting will be held at the Crowne Plaza Hotel in downtown Knoxville, Tennessee. Whereas ICALEPCS 2005 was held in Geneva near the Alps – one of the youngest mountain ranges in the world, Knoxville is nestled at the foot of the Great Smoky Mountains – the oldest range of mountains in the world. In October these ancient hills show their spectacular fall colors, attracting tourists from around the world. The Great Smoky Mountain National Park is the most visited park in the US, and nearby Gatlinburg and Pigeon Forge feature famous tourist and shopping areas. The region is well-known for its Bluegrass Music and for hometown favorite Dolly Parton.

As in the past, the Conference will feature a vendor exhibit. Because of the narrow focus of ICALEPCS on control systems and related technologies, vendors with hardware or software products related to

this area will find an audience almost all of whom will be interested in their products. Satellite meetings arranged so far include meetings of the EPICS and Tango Collaborations, a workshop on computer

security as it relates to control systems, and a low-level RF workshop to be held in the same hotel the following week. Further information about ICALEPCS 2007 can be found at [www.sns.gov/icalepcs07](http://www.sns.gov/icalepcs07).

## NPSS GENERAL BUSINESS

### PRESIDENT'S REPORT

The NPSS sponsors or co-sponsors approximately 14 conferences and some members of the AdCom view the NPSS business as our main interest in hosting technical conferences. For many, it is how we initially became involved in IEEE activities and why we maintain our NPSS membership. Moreover, a particular NPSS conference is an event we do not want to miss.

Many IEEE Societies host single conference and it is highly unusual for an IEEE Society to host many diverse conferences - as NPSS does. The diversity in our conferences reflects the technical diversity of our membership. NPSS has seven Technical Committees, each of which sponsors at least one conference which is run largely autonomously by the sponsoring committee. As NPSS President, I have observed the value of our diversity: it enables the quick spread of ideas yet allows each Technical Committee has its own culture, traditions and needs. I was fortunate that I inherited a well functioning society and as such, can concentrate on ways to make NPSS even more valuable to its members. I would like to illustrate some of the trends among our various conferences.

Several of our Technical Committees related to various aspects of the Plasma Sciences have members in common and are combining or collocating their conferences. This year, June in Albuquerque, New Mexico will be a hotbed of NPSS activity. The Pulsed Power Sciences and Technology and the Plasma Science and Applications Technical Committees are holding a joint conference, known as PPPS2007. This combining of these two conferences was first done in 2001 with great success. Further synergy is gained by collocating the Symposium of Fusion Engineering with PPPS2007 and even having joint social events and sessions. The following week, the Particle Accelerator Conference will be held in the same venue. In the weekend between the conferences, a Plasma Science Weekend is planned as an educational outreach to the community. This is a wonderful example of one variation of the syn-

ergy between our technical committees.

NPSS has been keen on getting the international perspective at AdCom for nearly a decade and has a very active Transnational Committee. This year, our Transnational Committee Chair, Uwe Bratzler, has been named a liaison to IEEE Region 8 from TAB. Another Transnational Committee Member, Patrick LeDù has taken on the role of Transnational Conferences Liaison to facilitate conferences held outside North America. The Real Time Conference, sponsored by the Computer Applications in Nuclear and Plasma Sciences Technical Committee, is routinely held outside the United States. In recent years, other conferences are focusing on serving a wider community by attracting more international participants to their conferences. The Radiation Instrumentation and the Nuclear Medical and Imaging Technical Committees have, in recent years, held several conferences in Europe to facilitate interaction with their European colleagues. With several large and successful conferences held in Europe, and with more in the planning stages including a Plasma Science ICOPS conference, NPSS is taking the first steps toward encouraging more participation by their Asian colleagues by holding two conferences in Hawaii this year: the Nuclear Science Radiation Effects Conference and the Nuclear Sciences Symposium and Medical Imaging Conference. Both technical communities have extensive ties with Asia and would like deeper interaction with their Asian colleagues.

At NPSS, our conferences are the most public activity we have and we are exceptionally proud of them. Judging from the many conferences I have been to, they are highly valued by the participants. At NPSS, we continually look for ways to improve, and the diversity found within NPSS is truly an asset.

*Jane Lehr, IEEE NPSS President, can be reached at Sandia National Laboratories, MS-1193, PO Box 5800, Albuquerque, NM 87185-1193; Phone +1 505 844 8554; E-mail: [jane.lehr@ieee.org](mailto:jane.lehr@ieee.org).*



**Jane Lehr**  
NPSS President

Only  
politicians?

What is it about  
retiring that  
makes politicians  
so much  
smarter?

*William Watson*

## SECRETARY'S REPORT



**Albe Dawson  
Larsen**  
NPSS Secretary and  
Newsletter Editor

The last AdCom meeting was held in San Antonio, TX at the Menger Hotel. We welcomed new AdCom members Sandra Biedron (PAST) returning for a full term, Eric Frey (NMIS), Jim Schwank (RE) and Rick Van Berg (RI), and Ron Gilgenbach, the new chair of the Plasma Science and Applications TC to their first meeting of their terms.

Ed Lampo noted that we are behind in closing out conferences, and that the situation is not improving. Not only does this mean penalties, it also means that the IEEE auditors are unhappy. Conferences are being asked for more frequent reporting prior to conferences and during the closeout period. Turning accounts over to IEEE Conference Services for final closeouts helps a lot. You don't have to wait to pay that last late bill. It can be paid directly from Piscataway, saving both our treasurer and your conference treasurers' considerable grief. However, we did end up in a financially healthy position in 2006 with an increase in reserves due in part to *Transactions on Plasma Sciences* staying within its page budget, and thereby gaining us a bonus.

Jane Lehr reported on the TAB meeting. The Engineering Management Society will become a council. NPSS will not be involved. Hal Flescher's algorithm for infrastructure support was approved. This will impact us financially, but not to a harmful extent. A percentage of earned packaged product income will be used to support indirect infrastructure activities. This will avoid the need for a huge dues increase that the present paradigm would require, and which certainly would be unacceptable to membership.

IEEE membership has increased and the traditional early year slump was not seen this year. The IEEE Foundation has money to support technology literacy programs, so get in touch with them if you have ideas and would like to submit a proposal. IEEE has also developed a new Best Practices for Conferences. It is on line at <http://www.ieee.org/web/conferences/mom/index.html>.

Jane has joined the TAB Periodicals Committee.

Plans for all 2007 conferences are well in hand. The weeks from June 17 through June 29 in Albuquerque will be an IEEE NPSS extravaganza, as Jane has discussed in the President's Report. Plans for 2008 and 2009 conferences are also well in hand and you can

learn much about them from the NPS web site, <http://www.ieee-npss.org>. If you have comments or suggestions for improving the web site, send them to me, to Peter Clout ([clout@vista-control.com](mailto:clout@vista-control.com)) or to Richard Kouzes, our web master ([RKouzes@pnl.gov](mailto:RKouzes@pnl.gov)). We'd like to make our web site as useful as possible for our members.

Our Transnational Committee continues to expand and now has 18 members, with expansion ongoing. The goal is not just to represent our members outside North America, but to also represent the full breadth of our technical community. There is also discussion of a new chapter in Taiwan. Remember that you can get your international colleagues involved in your conferences as session chairs, reviewers, committee members and so on, thereby broadening the international aspects of NPSS. The Membership Committee is also looking at some small benefits at conferences in the USA for international participants. Additionally, our Transnational Conferences Liaison, Patrick LeDû, is available to consult with chairs of these conferences, help provide a liaison to Tony Lavietes, the Associate Treasurer for conferences, and to give guidance from his own many experiences in organizing international IEEE NPSS conferences ([patrick.ledu@cea.fr](mailto:patrick.ledu@cea.fr)). Patrick will work with the Conference Planning Committee to add a chapter on planning international conferences to the NPSS-specific conference planning guide that complements the IEEE guidelines referenced above.

Our Distinguished Lecturers program is starting to gain traction and we have quite a fine roster of speakers available for chapter and other meetings. There is even some help available. Check out our web site and contact Charles Neumeyer ([cneumeyer@ppl.gov](mailto:cneumeyer@ppl.gov)) with questions.

The Fellow Candidate Evaluation Committee has some concerns about recommending people as IEEE fellows who, although exemplary in their field, have no visible IEEE involvement beyond having rank of Senior Member – that is, they haven't published in IEEE journals, haven't participated in IEEE conferences as presenters or committee members or reviewers, and so on. This is an ongoing discussion and is relevant to other societies as well.

Please note Bill Moses' article on need for nominees to fill elected AdCom positions

**Not for our  
government**

**Rules are not  
necessarily  
sacred;  
principles are.**

**Franklin  
Roosevelt**



for Fusion, Plasma Science and Applications, Pulsed Power and Radiation Effects Technical Committees. Serving on AdCom is both a privilege and a wonderful education about the depth and breadth of our society's work, as well as an opportunity to gain better connectivity with what is happening at the TAB and Board of Directors levels of IEEE.

Our publications are doing well, and are ranked highly on the basis of "hits" and citations.

The Standards Committee has withdrawn the germanium detector standard to upgrade

figures. Fourteen of our standards were reaffirmed recently. If you have an interest in standards development, contact Ron Keyser (Ron.Keyser@ametek.com), our Standards Committee Chair.

Allan Johnston, our new liaison to IEEE Women in Engineering, gave a comprehensive report on this fairly new activity. We are one of only eight of 39 IEEE societies with a liaison to this group. If you are interested, contact Allan at allan.h.johnston@jpl.nasa.gov.

The AdCom will meet again on June 23, 2007 in Albuquerque.

## TECHNICAL COMMITTEE REPORTS

### COMPUTER APPLICATIONS IN NUCLEAR AND PLASMA SCIENCE

As these lines are being written, there are close to 200 participants registered for the 15th meeting of the IEEE NPSS Real Time Conference at Fermilab (April 29th to May 4th 2007). One of the highlights of this conference is the attribution of the CANPS award. This award is meant to recognize individuals who have made an outstanding achievement in the application of computers in nuclear and plasma sciences. The recipient this year is Dr. Peter Clout, founder of Vista Control Systems.

Dr. Peter Clout has been an innovative leader in the area of real-time computerized data acquisition and control systems for over 35 years. During much of this time, Peter has been an active leader of the IEEE NPSS and

of CANPS. He worked on the development and implementation of the CAMAC hardware standard, was project leader at Los Alamos National Laboratory in the 1980s, and served as president of NPSS. At the head of Vista Control Systems, he developed a diverse customer base in the military, research and industrial sectors for his control and data acquisition system products. Peter was also awarded the NPSS Shea Award for service to the Society in 2002.

*Jean-Pierre Martin, Chair of the Computer Applications in Nuclear and Plasma Science Technical Committee can be reached at the University of Montreal, RJA Lévesque Laboratory, Montreal (QC), Canada H3C 3J7. Phone +1 514 343 7340; e-mail: jpmartin@lps.umontreal.ca*



**Jean-Pierre Martin**  
Chair, CANPS



**Peter Clout**  
2007 RT Award  
Recipient

### NUCLEAR MEDICAL AND IMAGING SCIENCES TECHNICAL COMMITTEE (NMISTC) UPDATE

We are coming up on another round of elections. I will have contacted potential candidates in May with the goal of circulating the ballot in late June. This year we elect 5 members at large and a new vice-chair. Charles Watson will assume duties as chair after the 2007 NMISC meeting at the IEEE NSS/MIC conference in Hawaii.

#### **MIC 2007**

This meeting will be held at the Hilton Hawaii Village, Honolulu, Oct. 26-Nov 3, 2007. The

general chair, Ben Tsui (Johns Hopkins) and his team are in the midst of the ordered chaos that occurs as we draw close to the meeting date. Our expectations are for abstract submissions on par with the last two years and that may well require some creative decisions by the program committee given space constraints at the conference site. We again thank Eric Frey (the MIC chair), and Magnus Dahlbom (deputy MIC chair) for their efforts for this year's meeting. By the time this newsletter is published, the abstract deadline



**Tom Lewellen**  
Chair, NMISTC

---

## Gratifying end

I didn't attend the funeral, but I sent a nice letter saying I approved of it.

Mark Twain

---

## On the mark

Talent hits a target no one else can hit; genius hits a target no one else can see.

Arthur Schopenhauer

will have passed. But I do urge all who wish to attend to make those reservations early and get ready for another outstanding meeting.

### **MIC 2008**

The 2008 committee and general chair Uwe Bratzler has also had their share of work getting ready for the 2008 meeting to be held at the conference center in Dresden. The committee is planning on a large meeting based on the European response to the meetings in Lyon and Rome. We look forward to the first IEEE NSS/MIC to be held in Germany.

### **MIC 2009**

The contract for 2009 has been signed and Richard Lanza (NSS chair for 2005) has agreed to be the General Chair. I am happy to inform you that Ramsey Badawi (deputy MIC chair in 2005) has signed on as the MIC chair and (for better or for worse), your current NMISC chair will take on the duties of local arrangement chair. The site will be the Hilton at Walt Disney World. We will take over the entire conference area at the hotel and expect to have enough room for all of our functions (and avoid some of the problems we have faced in recent years). The room rate will be \$175 (in 2009 dollars), but we also have commitments for a percentage of our room block to be at federal per diem rates as well as a number of student rate rooms (at \$119/night). Keep an eye out on the NSS/MIC web site ([www.nss-mic.org](http://www.nss-mic.org)) for more information.

### **MIC 2010**

The runner up site for the 2009 selection was Knoxville. There were several concerns that dropped Knoxville to the second place on the site list for 2009. Continued discussions with the Knoxville convention center and bureau have resolved the major issues and, pending successful negotiation of a formal contract, will be recommended to the NMISC as the 2010 site. We are breaking tradition with two east coast sites in consecutive years, but the groundwork is almost complete as a result of the 2009 site search and we have strong support from ORNL, Ortec, and Siemens Knoxville to hold the meeting there. Ron Keyser has volunteered to be the general chair and has the unanimous support of the site selection committee. Part of the motivation was to balance the meeting sites between high visibility tourist areas (e.g., Hawaii, Orlando,

Puerto Rico) and so-called second tier cities. For those who have been to Knoxville, you know it is a most pleasant city with a beautiful countryside. The facilities are first rate and we will be able to offer hotel rooms at ~ \$120/night in 2010.

### **MIC 2011 AND 2012**

The site committee is now looking at options for 2011 and 2012. There has been an ongoing discussion of how often the meeting should be held in Europe with the current two options being every four or every three years. This issue must be resolved before we can finalize options for 2011 and 2012. The committee is also reviewing proposals from an organizing group in Spain to hold the meeting in Madrid. So far, this looks like a very strong option, but we have not yet finalized whether it would be in 2011 or 2012. Whichever of those two years we are in Europe, the other year will be a West Coast region city. Several sites are now being investigated and more details will be available by the NMISC meeting in October 2007.

### **OTHER ISSUES**

Besides the on-going discussion of where the NSS/MIC meeting should be held, how to balance the need for a considerable space for the exhibits and posters, and the always tough issue of room cost versus site options, we also need to review once again the constitution. We are a bit out of sync with the RISC constitution on our definition of the executive committee that shares tasks between RISC and NMISC. I will organize a small group to consider one more round of changes during the summer, but if you have suggestions please send them to me before the 2007 NSS/MIC meeting ([tkldog@u.washington.edu](mailto:tkldog@u.washington.edu)).

Investigators, particularly in the United States, are facing difficult financial times with the low percentiles needed to obtain NIH funding, the cuts in the DOE funding for Nuclear Medicine, and the restrictions in local institutions finances. In spite of these problems, we do anticipate a strong turn out for the MIC meeting. It is still a unique venue for frank discussion of technologies and goals for the use of imaging in biomedical research and clinical applications. Our membership and attendees are leaders in their fields and the papers are always of the highest quality. But the success of the meeting really depends on those who volunteer to

assist the organization of the meeting and NPSS general management. I urge those of you who want to assure the continuation of the success of MIC to let your NMISC chair know of your interest so that you can become more involved.

*Tom Lewellen, Chair of the NMISTC, can be reached at Radiology, Nuclear Medicine, Room 200, Old Fisheries Science Center, University of Washington, PO Box 357897, Seattle, WA 98195; Phone: +1 206 543 2365; E-mail: tkldog@u.washington.edu.*

## FUNCTIONAL COMMITTEES

# AWARDS THE IEEE NPSS AWARDS PROCESS

I would like to begin this article by thanking our outgoing NPSS Awards Chairman, Igor Alexeff. Igor did a superb job over the last 4 years. Under Igor's leadership, there has been an awardee for every NPSS award. That may sound easy, but it's a fair amount of work to prepare a nomination and get the necessary references to the Awards Committee by the 15th of May.

As part of the transfer of duties, Igor prepared an outline of the IEEE NPSS Award Process. This is the process for Society-level awards like the Merit, Shea, Early Achievement, etc. For these awards, the IEEE prepares plaques, certificates, and checks that are mailed directly to the awardee. That information and more is included in the NPSS Awards Process that follows:

1. Awards applications received by May 15.
2. Packages duplicated and mailed to members of awards committee.
3. Rankings received back from the committee. A spread sheet is prepared.
4. Awardees decided by the Awards Committee following extensive discussions.
5. For award winners, both nominators and nominees are notified of the decision of the committee. If a candidate is unsuccessful, only the nominator is notified of the decision.
6. Proposed citations on plaques and certificates checked for accuracy.
7. Awardees names submitted to IEEE. Liz Parascondola (E.Parascondola@ieee.org) prepares certificates and plaques and Rosanne Loyal (r.loyal@ieee.org) prepares checks for Society-level awards.
9. Rosanne Loyal sends out Income Tax Forms to awardees. Check cannot be sent out until signed Income Tax Form is returned by awardee.
10. The plaques, certificates, and checks are

mailed directly to the awardee to avoid possible loss. If a presentation is desired at a given meeting, the nominator or the awardee is responsible for bringing the plaque for photo opportunities. Since the Awards Committee doesn't decide award recipients until the fall, awards are generally presented at meetings during the subsequent year. For example, most 2007 awardees will receive their plaques at conferences of their choice held during 2008. However, there is an option to have both the year awarded and the year presented printed on the plaques and the certificates.

11. Names, biographies, citations and photos of the awardees are submitted to the NPSS newsletter by the awardees. Send the material to [amlarsen@slac.stanford.edu](mailto:amlarsen@slac.stanford.edu).

The process for choosing winners of Technical Committee Awards, e.g., Radiation Effects Award, Plasma Science and Applications Award, Edward J. Hoffman Medical Imaging Scientist Award, etc., is the responsibility of the respective Technical Committee. IEEE is available to prepare plaques, certificates, and checks for these award winners too. Once again, the contacts are Liz Parascondola for plaques and certificates and Rosanne Loyal for checks.

NPSS Awards are very competitive. There have been several excellent candidates for each award. So, please keep the nominations coming. Our NPSS awardees are of the highest caliber. IEEE NPSS Awardees for 2006 are: Charles Melcher for the NPSS Merit Award; Paul Dressendorfer for the NPSS Shea Award; John Luginsland for the NPSS Early Achievement Award; Xin Dai, Carrie Hruska, Randolph McKinley, and Xing Zhou for NPSS Graduate Student Awards.

Igor and I would both like to thank the



**Peter Winokur**  
Awards Committee  
Chair

## The thin edge

Your body is the baggage you must carry through life. The more excess baggage, the shorter the trip.

*Arnold Glasgow*

members of last year's Awards Committee for their hard work and dedication. They are Bill Moses, Ray Larsen, and Hal Flescher.

*Peter S. Winokur, Chair, NPSS Awards*

*Committee, can be reached at the Defense Nuclear Facilities Safety Board, Washington, DC; Phone: +1 202 694-7090; E-mail: p.winokur@ieee.org.*

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## Communications



**Peter Clout**  
NPSS  
Communications  
Committee Chair

As reported in the last Newsletter, this in the year when we re-print the NPSS Brochure and the leaflets. Since the last report this job has consumed almost all my spare time with the seeking of suitable pictures, quotes from members and changes and updates to the text. Often, including of edits from the committee and the proofing the brochure and leaflets was done against a tight deadline to meet schedule for the first conference delivery. My grateful thanks go to the members of my committee and others who contributed to the process. I think that the team did a great job and certainly a very much better one than I could do on my own!

This time I wanted to have a different look to the brochure and leaflets and I have relied on an outside design and production company to do this. This company also is working on the IEEE Annual Report this year. At the time of writing, the material is through the final printer's proof and is being printed so that by the time you read this the first conference attendees and the Chicago Chapter will have seen the result.

In addition, the topics were changed to concentrate more on member activities and then just have one section on administration of our very considerable business. This reduced some repetition between conferences and the old technical committee section, the latter now omitted.

Next will be new banners for the membership booth and the conferences. The current banners have done excellent service and will be kept for

use at meetings in addition to the new ones.

We also ship copies of older issues of the journals to the conferences so that attendees can see them and take one if interested – better given out this way than have excess copies pulped.

This year we have four of our conferences held in one place spaced over two weeks and this greatly simplifies the work of shipping and receiving! This is even more simplified because these meetings are a short drive from my office where the materials are stored.

Please give me feedback on the new materials – while we can not make changes after almost 2,000 lb. of printing, we can carry comments forward to the next production in 2009.

Please go to our web pages and review them with the question in your mind that if you were a member of the public, what information would be useful there? Of course, I am extremely interested in receiving proposed new pages to add - especially the content for them! In addition, what other promotional materials would be helpful and what else could we do to promote the activities of the NPSS?

We are always looking for volunteers to help, and so please do not hesitate to contact me if you are interested!

*Peter Clout, Chair of the NPSS Communications Committee, can be reached at Vista Control Systems, Inc., 176 Central Park Square, Los Alamos, NM 97544-4031; Phone: +1 505 662 2484; Fax: +1 505 662 3956; E-mail: clout@vista-control.com.*

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## Fellows

### NPSS FELLOW CANDIDATE EVALUATION COMMITTEE SEEKING MORE NOMINATIONS!



**Peter Winokur**  
Fellows Evaluation  
Committee Chair

Last year, there were only 9 nominations from NPSS for the grade of IEEE Fellow. The average is 13, so by any standard last year's total was below par. For the record, in calendar years 1999 through 2006, the NPSS Fellows Evaluation Committee

(FEC) evaluated 12, 11, 18, 13, 11, 12, 19, and 9 nominations, respectively. NPSS isn't guaranteed that a certain percentage of our nominations will be elected to the grade of Fellow, but a rule of thumb is about 40%. I'm pleased to report that 6 of the 9 NPSS nomi-

nees were elected to the grade of IEEE Fellow in 2006. That's 2/3, which is really unheard of. I attribute our extraordinary success to superb candidates and a very dedicated NPSS Fellow Evaluation Committee (FEC). I want to thank the members of the FEC for all their efforts. They are Victor Granatstein, Ron Huesman, Osamu Ishihara, Stan Schriber, Jim Schwank, and Peter Turchi. It's always challenging to review these nominations. I hope you can make our job ever more difficult by increasing the number of nominations in 2007.

*"An IEEE Fellow has been judged to have made extraordinary contributions in any of the IEEE fields of interest that are of significant value to the profession and society."* That's pretty heady stuff, but the entire evaluation process is predicated on identifying a candidate's primary contribution and its significance and impact. In 2007, the following NPSS members were elected to the grade of IEEE Fellow: Richard Kouzes, Wim Leemans, Warren Mori, Xiaochuan Pan, Ronald Pease, and Ned Sauthoff. Congratulations to our new fellows!

Each year, the NPSS FEC is asked to evaluate nominations from our eight diverse technical areas, e.g., pulsed power, nuclear medical imaging, radiation effects, etc. The NPSS FEC has experts from its technical areas, but each member of the committee is asked to evaluate all NPSS nominations as a generalist. This may seem daunting, but the committee quickly comes to a consensus about the top candidates for that year. These evaluations are forwarded to the national IEEE FEC where the final decisions are made. I served on the national IEEE FEC for three years and know that the society evaluations often carry the day. After all, who knows how to evaluate and rank candidates better than the societies?

Who is eligible to be nominated? The following requirements are from the IEEE Fellow Program Web Site: "To be nominated, the candidate must meet the following three basic qualifications: hold Senior Member grade at the time the nomination is submitted; be an 'active' member (that is, dues must be current); and must have completed five years of service in any grade of IEEE membership. Note: IEEE affiliate membership within an IEEE society does not apply."

Almost anyone can serve as a nominator of a candidate for IEEE Fellow grade; you do not even have to be an IEEE member. But, for perhaps obvious reasons, the following cannot

be nominators: members of the IEEE Board of Directors, members of the IEEE Fellow Committee, chairs and members of IEEE Technical Society/Council Fellow Evaluating Committees, or IEEE Staff.

A nomination must be supported by at least five, but no more than eight references from active IEEE Fellows. A list of IEEE Fellows can be found at the IEEE Fellow Program Web Site or in the current IEEE Membership Directory. The biggest stumbling point for nominations is getting five references. If possible, nominators should list eight references. That way, if one or two references can't meet the deadline, the nomination still has the required five references. It's also important for nominators to communicate with the references and verify that they actually sent in the reference. This is the third year for the IEEE Electronic Fellow Nomination Process, which no doubt makes it even easier to submit references.

The IEEE Board of Directors recently approved changes to the process for nominating and electing IEEE members to Fellow Grade. *The goal of these changes is to increase the number of nominations received for members from industry and to make the process more receptive to nominations received for application engineers or engineering practitioners who have made contributions of unusual distinction to the profession.* Specifically the changes established a new nomination category for individual contributions, "Application Engineer/Practitioner." This category recognizes significant contributions in "product development, advancement in system, application or operation, project management or construction activity, process development, manufacturing innovation, codes or standards development, or other application of technology." Also, the existing designation; "Engineer/Scientist" was changed to, "Research Engineer/Scientist." The other existing categories, "Educator" and "Technical Leader" remain the same. So, the IEEE now recognizes contributions in four distinct categories.

*The deadline for receipt of the Fellow Nomination Forms and Reference letters is the 1st of March.* Nominating forms, detailed instructions, and frequently asked questions can be found at the IEEE Fellow Program Web Site at [www.ieee.org/fellows](http://www.ieee.org/fellows). Don't wait to get started. Each year, several nominations miss the deadline by only a few days.

Recognizing the achievements of its members is an important part of the mission of the IEEE.

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**Step forward,  
please**

**Leisure is work  
you volunteer  
for.**

*Robert Robinson*

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**That one too??**

**Alcohol may be  
man's worst  
enemy, but the  
Bible says love  
your enemy.**

*Frank Sinatra*

On behalf of the NPSS Fellows Evaluation Committee, we urge you to consider making an IEEE Fellow nomination this year!

*Peter S. Winokur, Chair, NPSS Fellows*

*Evaluation Committee, can be reached at the Defense Nuclear Facilities Safety Board, Washington, DC; Phone: +1 202 694-7090; E-mail: p.winokur@ieee.org.*

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## NOMINATIONS CANDIDATES SOUGHT FOR ELECTED ADCOM MEMBERSHIP



**Bill Moses**  
*Nominations  
Committee Chair*

**A**re you interested in helping run the NPSS? The NPSS AdCom (Administrative Committee) is the body that “runs” the NPSS, which includes setting the policies for all of the conferences and publications that the NPSS sponsors. Each year we hold elections for approximately one quarter of the sixteen elected AdCom positions. This summer we will be holding elections for AdCom members elected from five NPSS communities: Plasma Science (the community that puts on ICOPS), Radiation Effects (the community that puts on NSREC), Pulsed Power (the community that puts on the Pulsed Power Conference), Fusion Technology (the community that puts on SOFE) and Computer Applications (the community that puts on the Real Time Conference). These are four-year terms that begin on January 1, 2008, with the exception of the

Computer Applications position, which is a two-year term as it fills a mid-term vacancy. In general, the requirements are that you are a member of both the IEEE and the NPSS (which basically includes everybody who receives this Newsletter) and that you have an interest in one of those five technical areas. If you are interested in running for one of these positions, you must let me know (wvmoses@lbl.gov) by June 30 of this year. You will be asked to submit a 200-word biography plus a 200-word position statement. Please feel free to contact me if you have any questions or need more information.

*Bill Moses, Chair of the NPSS Nominations Committee, can be reached at Lawrence Berkeley National Laboratory, MS55-12 One Cyclotron Road, Berkeley, CA 94720; Phone +1 510 486 4432; Fax: +1 510 486 4768; E-mail: wvmoses@lbl.gov.*

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## AWARDS

### 2006 MEDICAL IMAGING SCIENCE YOUNG INVESTIGATOR AWARD



**Suleman Surti**  
*2006 Medical Imaging  
Young Scientist  
Awardee*

**S**uleman Surti, Research Assistant Professor of Radiology at the University of Pennsylvania, received the 2006 Medical Imaging Science Young Investigator Award at the annual IEEE NPSS Nuclear Science Symposium and Medical Imaging Conference meeting on November 3rd, 2006. The award citation was “For contributions to PET instrumentation design and quantification of imaging performance.” He was nominated by Joel S. Karp, his mentor at the University of Pennsylvania. Dr Surti received a BA in physics from Ohio Wesleyan University in 1994, followed by a PhD in Physics from the University of Pennsylvania in 2000. From then until his faculty appointment in 2003 he was a post-doctoral fellow in the Department of Radiology.

From his nomination letter by Professor Karp:

Suleman Surti is an outstanding scientist who has made significant contributions to the design and development of high performance PET instruments and to our understanding of PET imaging performance. His computer modeling has helped to design several instruments for both human and animal scanning, and to guide the development of techniques to improve both image quality and accuracy of quantification. He translated concepts of Anger-logic continuous detectors to pixelated Anger-logic detectors, leading to detectors based on NaI(Tl), GSO, LYSO, and LaBr3. The pixelated Anger-logic detector with a continuous light-guide achieves a combination of high spatial resolution with uniform light collection, thus good energy resolution and timing resolution.

Suleman has also developed a compre-

hensive simulation package for PET scanner design, starting from basic detection concepts and incorporating both physical effects and scanner effects. In this way he has been able to guide the development of the system and help optimize its operation. He has used the comparison of simulated and measured data to assess imaging performance and to correlate intrinsic scanner performance with clinically relevant measures of image quality.

Suleman's work has had a large impact on the development of lanthanum bromide detectors and a time-of-flight PET scanner. The scanner design takes advantage of his modeling

of pixelated detectors, with additional emphasis on both energy and timing resolution, and his modeling of PET systems. The development of clinically relevant and task-oriented measures of performance helped guide the overall design of the scanner and helped validate the data processing (scatter correction) and image reconstruction (fully 3D list-mode reconstruction). The relevance of this work for clinical imaging is very high given the recent introduction of commercial TOF PET systems.

*Suleman Surti can be reached at University of Pennsylvania Department of Radiology 3400 Spruce Street, Philadelphia, PA 19104; Phone: +1 215-662-7214. surti@mail.med.upenn.edu*

**The more the merrier**

You can never understand one language until you understand at least two.

*Ronald Searle*

## PARTICLE ACCELERATOR SCIENCE AND TECHNOLOGY AWARDS FOR 2007

Since 1965, the IEEE Nuclear and Plasma Sciences Society has sponsored the biannual Particle Accelerator Conference. PAC2007 renews this tradition with a meeting in Albuquerque, New Mexico from June 25-29.

Since 1989, the Particle Science and Technology Awards have been presented at the Particle Accelerator Conference to honor outstanding contributions to particle accelerator science and technology. The 2007 winners are **Drs. Satoshi Ozaki and Michael Harrison**, Senior Scientists at the Brookhaven National Laboratory, Upton NY USA and **Dr. Victor Malka**, Research Director at CNRS, Laboratoire d'optique appliquée, Palaiseau, France.

Born and raised in Japan, Satoshi Ozaki moved to the USA in 1955 under the Fulbright Scholarship Program, soon after finishing his MS degree working on the reconstruction of the Osaka University Cyclotron. Immediately after obtaining his PhD in Physics from MIT in 1959 he moved to BNL, where he pursued experimental research studying the dynamics in particle interactions and spectroscopy of hadrons using the Cosmotron and AGS, from conception to the development of research facilities such as a major particle spectrometer and the use of a computer on-line for a real-time data analysis.

In 1981, Ozaki was asked to come to KEK to direct the construction of TRISTAN, a 60 GeV e+e-collider, the first major high energy physics research facility in Japan. The TRIS-

TAN Project was completed on schedule within the budget (>\$ 500M) in 1987. He returned to BNL in 1989 as the Head of the RHIC Project, which was successfully completed in 1999, leading to an outstanding physics program in the study of relativistic heavy ion collisions including the observation of new hot and dense matter that behaves like perfect liquid. He was also instrumental in bringing the polarized proton capability to RHIC with the funding support from RIKEN Institute of Japan.

Presently, as the Director of Accelerator Systems for NSLS II, he is engaged in the design of an ultra bright third generation light source.

Dr. Harrison was an Associate Project Director on the Relativistic Heavy Ion Collider ((RHIC) at Brookhaven Nation Laboratory. In this role he was responsible for overseeing the design and construction of the Relativistic Heavy Ion Collider (RHIC). He is currently Project Director of the Center for Functional Nanomaterials and the Program Director for the Americas Regional Team for the International Linear Collider Project. He received a Ph.D. from Liverpool University in England in High Energy Physics and came to BNL from Fermilab where he participated in the experimental high energy physics program as well as construction of the Tevatron.

Dr. Harrison has been a Fellow of the American Physical Society since 1994 and is a



**Satoshi Ozaki**



**Michael Harrison**



**Victor Malka**

former member of the High Energy Physics Presidential Advisory Panel (HEPAP). He is, or was, a member of accelerator oversight committees at Fermilab, the European Laboratory for Particle Physics (CERN), and the Deutsches Elektronen-Synchrotron (DESY). He has participated in numerous DOE Project and Laboratory Program Reviews in High Energy, Nuclear Physics, and Basic Energy Science programs.

Drs. Ozaki and Harrison are cited *“For leadership in the successful design and construction of the Relativistic Heavy Ion Collider.”*

Dr. Victor Malka is one of the most prolific scientific researchers in laser plasma accelerators. After graduating from his engineering school in chemistry, he started to study physics at University when he was 24 years old. He got his PhD in atomic physics in 1988 and got a permanent position at CNRS in 1989. He worked on inertial fusion, on parametric instabilities and on particle acceleration.

From October 2001, Victor creates his group of laser driven particle sources at the Laboratory of Applied Optics (LOA). He is making strong efforts in promoting the laser-particle acceleration in various fields. Victor likes

to explore new scheme and new applications of the laser plasma accelerators concept. He found various potential applications (in chemistry, radiobiology, medicine, material science) of importance for the whole scientific community. With expertise in plasma physics, he develops new bridges between different fields of science. His teaching activity at Ecole polytechnique is based on a “research approach” in domains such as lasers, physics, optics and plasmas, stimulates creativity and is appreciated by his students.

Dr. Malka is cited “For groundbreaking work on laser-plasma accelerators.”

The PAST Award Committee members for 2007 were: Ilan Ben-Zvi (Chair), Bruce Brown, Ron Davidson, Steve Milton, Thomas Roser, and John Seeman.

Links: <http://ewh.ieee.org/soc/nps/past-award.html> (PAST Awards); <http://pac07.org/> (2007 PAC)

*Ilan Ben-Zvi, chair of the Particle Accelerator Science and Technology TC can be reached at Brookhaven National Laboratory, Collider-Accelerator Department, MS911B, Upton, NY 11973; Phone +1 631 344 5143; Fax: +1 631 344 5954; E-mail: benzvi@bnl.gov.*

## YITZHAK MARON

### 2007 Plasma Science and Applications Award Recipient



**Yitzhak Maron**  
*2007 PSAC Awardee*

Professor Yitzhak Maron of the Weizmann Institute of Science (Rehovot, Israel) has been selected as the recipient of the 2007 Plasma Science and Applications Award for “pioneering the application of spectroscopic techniques to the detailed space and time characterization of electric and magnetic fields, charged-particle beams, and plasmas under extreme conditions of high-current, high-voltage, high-fields, and short-duration.” The award presentation will take place at the IEEE International Pulsed Power and Plasma Science Conference (PPPS 2007) in Albuquerque, New Mexico, 17-22 June 2007.

Yitzhak Maron was born on April 12, 1948 in Iraq. With his family, he emigrated to Israel in 1951. In 1968, he graduated with a B.Sc. in Physics and Mathematics from the Hebrew University in Jerusalem and went on to complete his M.Sc. studies there in 1970. From 1971-1977, he conducted his Ph.D. research at the Weizmann Institute of Science, where he spent an additional three years as a postdoctor-

al fellow. In 1980, he joined the Laboratory of Plasma Studies at Cornell University (Ithaca, New York) where he worked as a Research Associate. He returned to the Weizmann Institute in 1985 to become a Professor of Physics and is currently the Head of the Plasma Laboratory in the Faculty of Physics.

Professor Maron is a world leader in the development of spectroscopic methods to determine the charge and current density distributions as well as electric and magnetic fields in non-equilibrium short-duration plasmas. His pioneering experimental techniques have made it possible to measure, understand, and control the extreme plasma environments of high-power ion diodes, plasma opening switches (POS), and Z-pinches. His many “firsts” include the use of Stark shift measurements to determine the dynamic electric field distribution in the high-voltage gaps in ion diodes, making it possible to measure the electron density distribution in magnetically insulated diode gaps; the use of Doppler line shapes to determine the ion beam divergence



in acceleration gaps; the determination of the electron temperature and particle flow in dynamic ionizing plasmas; the use of Zeeman-splitting measurements in pulsed-plasmas to determine the evolution of the spatial distribution of magnetic fields in diodes, Z-pinches, and POS; and the determination of the properties of turbulent fields in diodes and POS plasmas. Professor Maron's body of work has greatly advanced the understanding of pulsed-plasmas and atomic physics under extreme conditions.

In addition to his outstanding scientific achievements, he has also helped to train new generations of researchers through his teaching activities and his collaborations with universities and institutions throughout the world. In recognition of his many talents and accomplishments, Professor Maron was made a Fellow of the American Physical Society in 1996 and a Fellow of the IEEE in 2005.

*Yitzhak Maron can be reached at the Weizmann Institute of Science, Rehovot, 76100 Israel; E-mail: Yitzhak.Maron@weizmann.ac.il*

So they tell me

“Money isn't everything” according to those who have it.

Malcolm Forbes

## AWARD SOLICITATIONS

# NMISC YOUNG INVESTIGATOR AND HOFFMAN MEDICAL IMAGING SCIENTIST AWARDS

These awards are sponsored by the IEEE-NPSS Nuclear and Medical Imaging Sciences Council (NMSIC), which is the steering committee for the annual Medical Imaging Conference(\*).

### **DEADLINE FOR APPLICATION: JULY 15, 2007**

The Young Investigator Medical Imaging Science Award is given annually to a young individual in recognition of significant and innovative technical contributions to the field of medical imaging science. The award consists of \$1,000, a certificate, and a plaque presented at the IEEE NPSS Medical Imaging Conference.

Nominees will be judged according to their contributions to medical imaging science as demonstrated by the technical merit and creativity of their research. Priority will be given to nominees whose research has been published in peer-reviewed journals, especially if the nominee is the first author. Graduate students or other individuals, whose highest degree was awarded no more than six years prior to the date of nomination are eligible.

The Edward J. Hoffman Medical Imaging Scientist Award is given annually to an individual in recognition of outstanding contributions to the field of medical imaging science. The award, consisting of \$2,000, a certificate, and a plaque, is presented at the IEEE Medical Imaging Conference. In selecting the recipi-

ent of this award, primary consideration will be given to the impact and innovativeness of a nominee's research in the field of medical imaging science. Other factors include a nominee's research contributions over a career and his/her influence on medical imaging science through education.

Please note there are several other IEEE NPSS awards that NSS/MIC attendees may qualify for:

- the Merit Award,
- the Richard F. Shea Distinguished Member Award,
- the Early Achievement Award,
- the Graduate Scholarship Award,
- the Paul Phelps Continuing Education Grant,
- NPSS Student Paper Awards

Please consider nominating your well-deserving colleagues for the IEEE Nuclear and Plasma Sciences Society and Committee awards. More details and application forms are available on the NPSS awards website: <http://www.ewh.ieee.org/soc/nps/awards.htm>

(\* *Held in conjunction with the Nuclear Science Symposium in Honolulu, Hawaii October 28 to November 3, 2007*

<http://www.nss-mic.org/2007>

*Paul Kinahan, the Chair of the NMISTC Awards Committee can be reached at: E-mail: [kinahan@u.washington.edu](mailto:kinahan@u.washington.edu).*



**Paul Kinahan**  
NMIS Awards  
Committee Chair

# 2008 PLASMA SCIENCE AND APPLICATIONS AWARD

Deadline: 14 September 2007



**David Abe**  
PSAC Awards  
Committee Chair

Established in 1988, this award recognizes “outstanding contributions to the field of plasma science.” The recipient need not be a member of the Nuclear and Plasma Sciences Society or the IEEE, but where candidates have otherwise equal qualifications, preference shall be given to the candidate who is an IEEE member. The award includes a cash prize, a plaque, and the privilege of presenting a plenary address at the annual International Conference on Plasma Science (ICOPS).

The nomination package should include: a nominating letter (5 page limit); biographical material for the person nominated (3 page limit); a publication/citation/patent list (5 page limit); 3 to 5 letters of support; and proposed text for the award citation (50 words or less). Please also include an e-mail address for

the nominator where receipt of the package will be confirmed.

Nominations should be submitted to David Abe by 14 September 2007 (electronic submissions preferred). A nomination form may be obtained online at <http://www.ewh.ieee.org/soc/nps/PSACaward.htm> or by sending an e-mail request to [david.abe@ieee.org](mailto:david.abe@ieee.org).

Information about other awards sponsored by the IEEE Nuclear and Plasma Sciences Society are described on the NPSS website at <http://ewh.ieee.org/soc/nps/>.

*Dr. David K. Abe, PSAC Awards Committee Chair, can be reached at the Naval Research Laboratory, Code 6841, 4555 Overlook Ave SW, Washington DC 20375 USA; Phone: +1 202 767 0033; Fax: +1 202 767-1280; E-mail: [david.abe@ieee.org](mailto:david.abe@ieee.org).*

## ARTICLES

### ALL ENGINEERS NEED LEADERSHIP SKILLS

By Gary C. Hinkle from *Today's Engineer*, April 2007, published by IEEE USA

#### Partisan pleasures

Politics is the only business I know of where doing nothing other than making the other guys look bad is an acceptable outcome.

Mark Warner

Engineers need to be influential. At all levels of an organization, engineers should play a significant role in driving innovations that will benefit customers and increase profits.

From the earliest stages of their careers, engineers are expected to lead projects and teams, and to bring new ideas to fruition. Senior-level engineers are expected to lead large, complex projects; to drive innovation; and to provide guidance for less-experienced peers. Excellent leadership skills are necessary to effectively execute such responsibilities.

Engineers are trained to innovate, but, unfortunately, many have not learned the skills necessary to influence others and to develop ideas that increase profits. Many managers are trained to do this, but they can't get into the minds of every engineer to harvest all of their ideas.

Engineers, then, need to know how to articulate their thoughts so that others will be inspired to build on them. They need to learn how to drive projects and ideas to create innovations that customers will value. While not every engineer will be the next Thomas Edison, every engineer can aspire to accomplish great

things that customers will value. Engineers who don't have these goals need to ask themselves Why not? Every manager who isn't encouraging their engineers to have high aspirations should ask themselves the same question.

Following are seven reasons why technical professionals need leadership skills:

- **Technical acumen alone is not influential.** Technical gurus without leadership skills have limited influence. Not many can achieve guru status, but wouldn't you rather be a guru with technical master and the combination of business skills and interpersonal skills that make a great leader?
- **Leadership is not just for managers.** Leading and managing require different skill sets. Some leadership experts might argue this point, but most agree that leadership has little to do with “management.” Generally speaking, managers should also be good leaders. However, strong leaders often aren't suited to be managers, and forcing a strong leader into a management role can be counterproductive.
- **Engineers lead projects.** Even engineers who aren't “project leads”

provide a certain amount of direction, and they need to influence others to help get their work done.

- **Engineers can guide less-experienced peers.**

Guidance is providing direction one of the three basic definitions of leadership (the other two are influence and authority).

- **Engineers need to help their managers' business succeed.**

You may not be inspired to help your manager be more successful as an individual, but you must be dedicated to helping your busi-

ness achieve success. If not, find another job.

- **Engineers can influence decision-makers in their organizations.**

Engineers understand technology better than non-technical managers, and they understand the details better than most technical managers.

- **Everyone should be interested in building character.**

Leadership is mostly character and a little bit of skill. People listen to people who have integrity and who apply it well on the job.

## Credibility gap

I have as much authority as the pope, I just don't have as many people who believe it.

*George Carlin*

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# JOHN STONE STONE – ENGINEERING HISTORY

*By Michael Geselowitz, from Today's Engineer, IEEE-USA, April 2007*

Anniversaries are wonderful opportunities to take stock and reflect on where we have been, where we are, and where we are going, as well as to celebrate our heritage. The year 2009 will be the IEEE's 125th anniversary. This reckoning is dated from the 1884 founding of the American Institute of Electrical Engineers (AIEE), the earliest of the IEEE's predecessor organizations, and in two years we can look forward to a number of recognitions and celebrations. However, an organization as complex as the IEEE can have many milestones in its history, and this month marks an interesting IEEE centennial.

The Society of Wireless Telegraph Engineers (SWTE) was founded in Boston on 25 February 1907 by an individual named John Stone Stone. Members of the growing radio field did not feel at home in the established, but power-oriented, AIEE. In January 1909, a similar radio organization, The Wireless Institute (TWI), was formed in New York, largely through the efforts of Robert H. Marriott, with some assistance from Alfred N. Goldsmith. In 1912, TWI absorbed the SWTE which had been struggling as the center of the radio industry moved from Boston to New York to form the Institute of Radio Engineers (IRE), with Marriott as its first president. In 1963, IRE merged with the American Institute of Electrical Engineers (AIEE) to form the Institute of Electrical and Electronics Engineers (IEEE). The rest, pardon the expression, is history.

However, it is worth pausing to consider John Stone Stone. If nothing else, he bears one of the most interesting names in electrical engineering history. For example, word-processor spell-checkers insist that the double name must be an error. Stone, son of Charles Pomeroy Stone and Jeannie (nee Stone) Stone, was born in Dover, Virginia,

on 24 September 1869. His parents were perhaps distant cousins, and the custom among their class of having the son take the mother's maiden name as a middle name led to his interesting appellation. After attending the Columbia University School of Mines and Johns Hopkins University, he began his engineering career in 1890 as an experimentalist in the American Bell Telephone Company laboratory in Boston. Over time, he held a number of positions, eventually founding his own company and ending up as a consultant with the American Telephone and Telegraph Company.

Stone made many contributions to the fields of wired telephony and wireless telegraphy (which he called "space telegraphy"). While working at Bell, he invented the Stone common battery system for telephones, characterized by the use of impedance coils between the battery and the line wires; and assisted in developing telephone transmission systems. He held several patents, including one for an important system of loosely coupled, tuned circuits for radio transmission and reception. Additionally, he authored several important technical papers.

Perhaps Stone's greatest contribution, though, was his belief that radio engineers needed their own professional society. After his SWTE was absorbed into the IRE, he served the Institute as a member of the board of directors from 1912 to 1917, as vice-president from 1913 to 1914, and as president in 1915. He was made a Fellow of the IRE in 1915 and received the Medal of Honor in 1923. John Stone Stone died on 20 May 1943 in San Diego, California. For a more complete biography see [www.ieee.org/web/aboutus/history\\_center/biography/stone.html](http://www.ieee.org/web/aboutus/history_center/biography/stone.html), and for more detail on the history of IEEE see [www.ieee.org/web/aboutus/history\\_center/history\\_of\\_ieee.html](http://www.ieee.org/web/aboutus/history_center/history_of_ieee.html).

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## Make me an offer

He that is of the opinion money will do everything may well be suspected of doing everything for money.

*Benjamin Franklin*

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