

# Nuclear & Plasma Sciences

Number 1 • March 2007

SOCIETY NEWS

## CONFERENCES

### PULSED POWER AND PLASMA SCIENCE 2007; SYMPOSIUM on FUSION ENGINEERING; 2007 PARTICLE ACCELERATOR CONFERENCE MEET IN ALBUQUERQUE

June 17 – 29, 2007

### PULSED POWER AND PLASMA SCIENCE 2007

June 17-22, 2007

Albuquerque Convention Center  
Albuquerque, New Mexico, USA

## WELCOME AND BIENVENIDOS!

Albuquerque, New Mexico will achieve critical mass when attendees of the 34th IEEE International Conference on Plasma Science (ICOPS) and the 16th IEEE International Pulsed Power Conference (PPC) meet at the Albuquerque Convention Center June 17-22, 2007 for “PPPS-2007.” This is the second time that these two conferences are combining their activities, following the initial joint event in Las Vegas in 2001. Extending the concept, the IEEE Nuclear and Plasma Sciences Society’s Symposium on Fusion Engineering (SOFE Conference) will also be collocating with PPPS-2007, using the west wing of the Albuquerque

Convention Center. Registrants of either conference will be able to attend sessions in both conferences.

Albuquerque is the largest city in New Mexico with a metropolitan population of nearly 800,000 people and home to the University of New Mexico, Kirtland Air Force Base, Sandia National Laboratories, and many high tech companies, both large and small. Los Alamos National Laboratory is only 90 minutes to the Northwest. The cottonwood-shaded Rio Grande River Valley and Petroglyph National Monument lie to the west and the majestic Sandia Peak lies to the east. The Sangre

*continued on page 3*



**Edl Schamiloglu**  
General Chair



**Frank Peterkin**  
Technical Program  
Chair



**John Gaudet**  
Finance Chair



**Charles Reuben**  
Conference  
Coordinator

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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 April 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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de Cristo Mountains and Santa Fe are 50 miles to the north.

The conference will be held within walking distance of Central Avenue, also known as **Route 66**, which is convenient to entertainment, shopping, and fine dining, especially New Mexican cuisine. New Mexican food has a distinct style, the most visible element being the type of chile pepper used, either red or green.

The combined conference is expected to attract over 1200 attendees. Information about PPPS-2007, and a downloadable abstract brochure, can be found on its website located at <http://www.ece.unm.edu/ppps2007/>.

Former NPSS President William Moses sees the upcoming conference as a golden opportunity for members to expand their horizons, noting that ICOPS and PPC have not shared a conference since 2001.

“Most researchers don’t have the time or money to attend a conference that is not directly related to what they’re doing in their work,” said Moses. “By having all these conferences at the same place and at the same time provides a unique opportunity to attend a related conference at no additional time or cost.”

Frank Peterkin, Technical Program Chair of PPPS-2007 agrees, “The practicalities of getting financial backing to go to two conferences instead of one are significant to both students and professionals. This enables an attendee to socialize and learn from both their direct technical peer community and their ‘near-peers,’ to walk down the hall and learn something new about a topic they wouldn’t otherwise have the opportunity to explore.”

The PPPS-2007 conference comprises the following topics:

- Fundamental Research and Basic Processes
- Microwave Generation and Plasma Interactions
- Charged Particle Beams and Sources
- High Energy Density Plasmas
- Pulsed Power Switches and Components
- Industrial, Commercial, and Medical Applications
- Pulsed Power Sources
- Pulsed Power Systems
- Diagnostics
- Prime Power & Power Conditioning

In addition to these topics, a two-day mini-course will be offered on June 22 and 23 entitled, **Diagnostics for High Density Plasmas and Pulsed Power Systems**. Furthermore, a special workshop entitled **Writing for and Working with the Film Industry: An Introduction for**

**Scientists and Engineers** will be offered on June 23. Two Hollywood insiders who have experience in virtually all aspects of motion pictures will teach the short course, in addition to support from the burgeoning New Mexico film industry.

Peter Clout, a physicist and chairman of the NPSS communications committee, spoke excitedly about the combined conference. “It’s a very effective way of meeting colleagues, to sit and talk about what you’ve been doing. There is a lot of valuable information which doesn’t appear in print that only comes out in one-on-one conversations.”

“It’s like browsing in a bookstore,” Clout continued. “You stumble into people you would not have otherwise met or whose work you might not have come across.” Regarding SOFE 2007 collocated with PPPS-2007, “They have come together with a common registration, attendees who are interested in one conference are free to drop in on another: Cross fertilization.”

Conference Chairman Edl Schamiloglu, a Professor at the University of New Mexico, expects a large international participation because the conference is located in Albuquerque, New Mexico, “arguably the Mecca of Pulsed Power and Plasma Science Research in the United States.” He notes that, in addition to PPPS-2007, the IEEE Particle Accelerator Conference (PAC07) will take place at the Convention Center the following week. “PPPS-2007 is coordinating closely with PAC07. We are working with both the Governor’s and Mayor’s offices to plan outreach activities to the community, and to K-12 students in particular, during the weekend in between our two conferences. We are also looking forward to hosting the NPSS AdCom meeting during this weekend as well.”

PPPS-2007 has budgeted generously to support student travel. In addition, we will be selecting “Best Student Papers” for the first time, an idea suggested by NPSS. Details can be found in the Call for Abstracts brochure posted on the conference website.

Finally, PPPS-2007 will have a large Exhibitor’s Program located in the hall hosting the poster sessions. Also included in the same hall will be the Job Placement Center, connecting prospective employees with employers.

Whether your preference is red, or green, or “Christmas” (a little of each), we look forward to your participation in PPPS-2007 in Albuquerque, New Mexico, USA in June 2007.



*The world’s longest single-span aerial tramway rising to 10,378 ft. with an 11,000 square mile panoramic view from the peak of Sandia Mountains.*

## Believe me

Appealing to everything in general to explain something in particular is really no explanation at all.

*Paul Davies*

# 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 combined 2007 ICOPS and the 2007 International Pulsed Power Conference (International Pulsed Power and Plasma Science 2007) that run through June 22. Attendees registered with SOFE can attend sessions of the other conferences and will receive a pocket program for all three as well as the program book for SOFE. A grand plenary including all three conferences is planned for the first day. The 2007 Particle Accelerator Conference is being held the following week at the Convention Center.

The meeting is being organized by Sandia National Laboratories. The SOFE07 conference General Chair is Dennis Youchison. The Technical Program Chair is Michael Ulrickson and Rena Yellowrobe is the conference coordinator. 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 late morning parallel sessions with oral invited and contributed presentations in selected technical areas. The oral presentations continue in the early afternoon, followed by poster sessions.

Submissions in all areas of magnetic fusion

energy (MFE) and inertial fusion energy (IFE) are sought, including:

- Experimental devices and new device design
- Reactor studies
- Plasma facing components
- Plasma materials interactions for IFE, MFE and alternates
- Targets for IFE and alternates
- Chambers, vacuum vessels and pumping for IFE, MFE and alternates
- Blankets, and shields for IFE, MFE and alternates
- Diagnostics, data acquisition, and plasma control systems
- Safety and environmental engineering
- Heating and current drive
- Plasma fueling
- Tritium handling systems
- IFE drivers and related technologies
- Magnet engineering for IFE, MFE and alternates
- Materials assembly, fabrication, and maintenance
- Power systems
- Electromagnetics and electromechanics.

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

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## RSVP

If human nature never changes, why is it that we not only don't practice cannibalism any more, but don't even want to.

*George Orwell*

# 2007 PARTICLE ACCELERATOR CONFERENCE PAC07

June 25-29, 2007

Albuquerque, NM

Plans for PAC'07, the 22nd conference in this highly successful conference series for accelerator science engineering and technology, are going very well. See the web site <http://pac07.org/> for more details and the invited speaker program. To date, 1813 abstracts have been submitted to the on-line JACoW site. On the basis of historic ratios of abstract submissions to conference attendees, attendance at the conference in Albuquerque, NM, June 25-29, 2007, could exceed 1400, making for the possibility of an extremely successful conference both scientifically and financially. On-line registration for delegates and for exhibitors began on January 10, 2007. Members of IEEE-NPSS and APS-DPB have a 10% discount on the conference registration fee. We have tried to encourage individuals to join a professional society by including the following message in the opening registration page "Volunteers, who are members of either IEEE-NPSS or APS-DPB, make it possible for important information exchange with colleagues at conferences such as the PAC series. Technical societies help our professional interests in many ways other than just supporting conferences. Prizes for significant contributions in accelerator technology, recognition for many years of contributions by awarding senior and/or fellow levels, support of publication processes and student support are just a few of the activities provided by our technical societies. Please consider joining if you are not already a member. Help make us stronger."

We expect at least 50 industrial exhibitors participating at the conference, having provid-

ed adequate space (80 separate booths available) for all of their interests and being well located within the poster paper area for good interactions with attendees.

Plans are also underway for two special events associated with the conference. The first is a science, engineering, and technology expose for the residents of New Mexico at the Albuquerque Convention Center Garden Foyer on the Saturday prior to the conference, June 23. Participants will be from Los Alamos National Laboratory, Sandia National Laboratory, University of New Mexico and some of the industrial exhibitors that have booths and exhibits at PAC07. Also included are the technical societies of IEEE and APS. The second is a special Teachers Physics Day on Wednesday, June 27, providing a full day of professional development geared to physics teachers that includes hands-on workshops presenting innovative, classroom-ready activities for physics students; research talks on accelerator technology and their applications for our daily life, a welcoming breakfast where they can network with fellow teachers and a luncheon where they can network with each other and conference participants.

A special student poster session will be held Sunday, June 24, to encourage the interaction of students with other students, colleagues and peers. Students, whose attendance is being partially sponsored by the conference, will be included in this opportunity to interact with others in the accelerator-related fields.

*Stan Schriber can be reached by E-mail at [schriber@cnsps.com](mailto:schriber@cnsps.com).*



**Stan Schriber**  
Chair, PAC 2007

## 15th IEEE NPSS Real Time Conference 2007

April 29- May 4, 2007

Fermilab

Batavia, IL USA

<http://computing.fnal.gov/cd/rt07/index.htm>

The 15th biennial IEEE NPSS Real Time Computing Conference, chaired by Margaret Votava of Fermi National Accelerator Laboratory, will be held at the Laboratory in Batavia, IL USA

during the week of April 29th. This is the CANPS TC's 2007 highlight. Topics include:

- real time system architectures,
- front-end signal processing,



**Margaret Votava**  
Chair, RT 2007

## Continuing Ed

With full-span lives having become the norm, people may need to learn how to be aged as they once had to learn how to be adult.

Ronald Blythe

- high speed synchronous control, trigger and DAQ,
- event building and fast networks,
- online processing farms and databases,
- controls and monitoring,
- medical systems and data processing,
- and emerging real time technologies including the concept of reconfigurable computing.

Several adaptations of this conference are foreseen for the 2007 edition. In addition to the traditional Plasma, Particle and Nuclear Physics real time aspects, we want to promote new fields. For example, Biomedical imaging real time data acquisition and processing is becoming a real challenge for the future. A few presentations in this field were made at the RT2003 and RT2005 conferences, and the synergy with our traditional activities was greatly appreciated. Also, the decision to build ITER, the next generation of experimental fusion reactors, will generate new challenges in real time control systems. These two examples show how rich and exciting the Real Time field will be in the near future.

An exciting component of this year's conference is a one-day workshop on the Advanced Telecommunications Computing Architecture

(ATCA). The workshop is planned to explore the merits of the ATCA for use by the real-time science community. Our goal is to provide information that will assist attendees in making design decisions about utilizing ATCA hardware and associated software to achieve high availability in large projects like the ILC. The morning session consists of two tutorials on ATCA hardware and software offered by experts in the telecommunications field. The afternoon will include example projects from the NPSS community, a panel discussion of ATCA suitability and alternatives, and a question and answer period with informal demos.

The ATCA workshop will be held on Sunday, April 29th, with the regular program to follow on Monday April 30th through Friday, May 4th. The format of the program will primarily be the same as in previous conferences with strictly plenary talks and poster sessions, with poster presenters afforded the opportunity to "plug" their posters with a 5 minute talk.

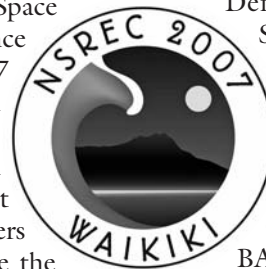
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## 2007 IEEE NSREC is Set for Honolulu, Hawaii July 23-27, 2007

The 2007 IEEE Nuclear and Space Radiation Effects Conference will be held July 23-27, 2007 in Waikiki Beach, Honolulu, Hawaii at the Hilton Hawaiian Village Resort. The conference features a technical program consisting of eight to ten sessions of contributed papers (both oral and poster) that 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.

The conference hotel is located on Waikiki Beach in Honolulu on the south-western side of the Hawaiian island of Oahu. Prof. Lloyd Massengill of Vanderbilt University and his conference committee are planning a complete technical and social program 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, Jet Propulsion Laboratory, Micro-RDC, Aerospace Corporation, ST Microelectronics, BAE Systems, Honeywell, and Aeroflex Colorado Springs.

### TECHNICAL PROGRAM

Prof. John Cressler of Georgia Tech, Technical Program Chairman, with the support of the technical committee, is assembling an outstanding technical program. The session chairs for 2007 include both highly experienced members of the radiation effects community, as well as emerging technical leaders. Three exciting invited presentations, all with a Hawaiian-locale theme, have been arranged.

The technical committee will meet in March 2007 for final paper selection. The oral presentations and posters will be selected

## Finicky

I preferred marrying a man who was too good rather than one who was not quite good enough.

Mary Baird  
(Mrs. William Jennings Bryan)

based on a peer-review process in order to present the very latest and best information on radiation effects findings. Although the deadline for submitting summaries has passed (February 2007), a few late-news papers describing new, unpublished results will be accepted and will be presented in the poster session. The deadline for submission of late-news papers is June 1, 2007. Please submit late-news summaries, using the 4-page summary and 35-word abstract format described at <http://www.nsrec.com>.

The technical committee is composed of the conference technical session chairs and the chairs for the Poster Session and the Radiation Effects Data Workshop. Dale McMorrow, Naval Research Laboratory, is the chair of the Poster Session, and Christian Poivey of NASA Goddard is the chair for the Radiation Effects Data Workshop. The Technical Session chairs are:

***Basic Mechanisms of Radiation Effects***

Andy Pineda

***SEE - Mechanisms and Modeling***

Veronique Ferlet-Cavrois

***SEE - Devices and ICs***

Younes Boulghassoul

***Space Environments and Effects***

Tom Jordon

***Terr. and Atmos. Environ. and Effects***

Ken Rodbell

***Hardness Assurance***

Steve McClure

***Dosimetry and Facilities***

Anatoly Rosenfeld

***Hardness By Design***

Tim Holman

***Radiation Effects in Devices and ICs***

Steve Bernacki

***Photonics***

Cheryl Marshall

**RADIATION EFFECTS DATA WORKSHOP**

The Radiation Effects Data Workshop is a forum for the presentation of radiation effects data on electronic devices and systems. Workshop papers are intended to provide radiation response data to scientists and engineers who use electronic devices in a radiation environment, and for designers of radiation-hardened or radiation-tolerant systems. Papers describing new simulation facilities are also welcomed.

**SHORT COURSE**

Attendees will have the opportunity to participate in a one-day Short Course on Monday, July 23. The theme for the 2007 short course is:

“Hardened Electronics for Tomorrow’s Strategic and Space-Based Systems” and is being organized by Prof. Hugh Barnaby of Arizona State University. Planned topics include: “Process Technologies and Hardening,” “Radiation Effects and Mitigation Strategies in Digital ICs,” “Radiation Effects and Mitigation Strategies in Analog/Mixed Signal,” and “Hardening at the System Level.” The course will be of interest both to radiation effects specialists and newcomers to the field.

**SOCIAL PROGRAM**

Susan Crain of the Aerospace Corporation, Local Arrangements Chairperson, is planning an exciting social program to enhance the informal exchange of ideas and the networking among attendees, and to provide engaging events for companions and family members not attending the technical sessions. The companion events include both cultural and geography-themed excursions. On Wednesday evening, the main conference social will be the best luau on the island at Paradise Cove.

**INDUSTRIAL EXHIBIT**

An Industrial Exhibit, coordinated by Barry Templeton of ISDE, will be included as an integral part of the conference. The exhibit, held on Tuesday and Wednesday, will include exhibits from 35-40 exhibitors that represent companies or agencies involved in manufacturing electronic devices or systems for applications in space or nuclear environments, modeling and analysis of radiation effects at the device and system level, and radiation testing. If you wish to exhibit, please visit [www.nsrec.com](http://www.nsrec.com) to obtain exhibitor information.

**2007 HOTEL INFORMATION**

The NSREC 2007 Conference Hotel “Block of Rooms” is open at the Hilton Hawaiian Village for the July 23-27 conference. The “Room Block” extends from the nights of July 21 through July 28. Corporate and government rooms are available at special conference rates. The conference committee has also negotiated room upgrades for those who desire them at significantly discounted prices. The conference room rates are available until July 31, subject to room availability. Government rate reservations will require authorized travel orders or equivalent documentation to be presented at the time of check-in.

The conference-negotiated room rates will be available until **June 20, 2007 or when the block is sold out** (whichever comes first). Early reservations are strongly encouraged, especially if you

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**Path of least resistance**

Men will always prefer a worse way of knowing to a better way of learning.

*Jean Jacques Rousseau*

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**Thought mechanism**

The limits of my language are the limits of my world.

*Ludwig Wittgenstein*

## More self-sufficiency

Congress' attempts to discredit Farooq Abdullah were in vain. They were also unnecessary because Farooq was perfectly capable of discrediting himself.

*Katherine Frank*

plan to extend your stay longer than the conference dates themselves, as we expect the room block to fill quickly. Please visit [www.nsrec.com](http://www.nsrec.com) to obtain all the information for booking your NSREC reservation.

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## 2007 IEEE NUCLEAR SCIENCE SYMPOSIUM and MEDICAL IMAGING CONFERENCE NSS/MIC

Honolulu, Hawaii

October 28 – November 3, 2007

DEADLINE FOR ABSTRACT SUBMISSION: May 11, 2007

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



**Ben Tsui**  
General Chair

After the successful 2006 joint conference in San Diego, the organization of the 2007 IEEE Nuclear Science Symposium (NSS) and Medical Imaging Conference (MIC) - which will be held in Honolulu, Hawaii, October 28 to November 3, 2007 - is in full swing. The venue of the conference is the Hilton Hawaiian Beach Resort and Spa that is situated on 22 ocean-front acres at the west end of Waikiki beach. It provides an ideal setting for our annual meeting, with a great mix of ample conference space, first class accommodations, over 20 restaurants and lounges, several shopping arcades with over 90 shops, exotic wildlife and

botanical gardens, and classic Hawaiian hospitality. A trolley conveniently connects the hotel to other locations in Waikiki.

This is the first time the NSS/MIC will be held at a site close to Asia. We would like to extend our warmest invitation to our colleagues in the Asia-Pacific region to attend the joint conference. A special session organized by our Asian members is being planned.

The Organizing Committee is planning on a joint conference that offers state-of-the-art and up-to-date scientific information through the regular oral and poster presentations. There will be a number of usual topical short courses before and new refresher courses during the



joint conference to review current topics of special interest. A commercial exhibit featuring the state-of-art products and services from a wide range of vendors will take place during the main part of the meeting. Also, the Organizing Committee is working hard on a fund-raising campaign to enhance the scientific and educational activities of the joint conference.

A companion program will provide daily tours to the many attractions and activities in and around Honolulu and Oahu Island during the joint conference. The main attractions include Pearl Harbor, the Arizona Memorial, Diamond Head State Park, Hanauma Bay Marine Preserve, Iolani Palace, the Bishop Museum, and the National Memorial Cemetery of the Pacific (Punchbowl). Also, pre- and post-conference tours of the other Hawaiian Islands, including the Big Island of Hawaii, Kauai and Maui are being planned.

On behalf of the organizing committee, we encourage you to make plans now to attend this exciting joint conference of the IEEE Nuclear and Plasma Sciences Society. We look forward to welcoming you to beautiful Honolulu, Hawaii.

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## NUCLEAR SCIENCE SYMPOSIUM

The Nuclear Science Symposium (NSS) offers an outstanding opportunity for scientists and engineers interested or actively working in the fields of nuclear science, radiation instrumentation, software and their applications, to meet and discuss with colleagues from around the world. The program emphasizes the latest developments in technology and instrumentation and their implementation in experiments for space, accelerators, other radiation environments, and homeland security. Topical workshops cover areas of specific interest. Within the framework of an educational scientific program, short courses are organized focusing on topics of interest for the scientific community. Authors are invited to submit papers describing original unpublished works in the topic areas listed below.

- Instrumentation for Homeland Security
- Analog and Digital Circuits
- Astrophysics and Space Instrumentation
- Data Acquisition and Analysis Systems
- Environmental Health and Safety Instrumentation
- Gaseous Detectors
- High Energy and Nuclear Physics Instrumentation
- Nuclear Measurements and Monitoring Techniques

- Photodetectors & Radiation Imaging
- Radiation Damage Effects
- Scintillators and Scintillation Detectors
- Solid State Tracking Detectors
- New Solid State Detectors
- Synchrotron Radiation Instrumentation
- Trigger and Front-End Systems
- Instrumentation for Medical and Biological Research
- Accelerators and Beam Line Instrumentation
- Computing and Software for Experiments
- Neutron Imaging and Radiography

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### Cause and effect

England has traditionally relied on landfill because of the country's abundance of holes.

*British Government Strategy Unit Report*

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### Trouble in the fast lane

Democracy is only possible when no one travels faster than the speed of a bicycle.

*Ivan Illich*

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## MEDICAL IMAGING CONFERENCE

### But not all!

You must have been warned against letting the golden hours slip by. Yes, but some of them are golden only because we let them slip.

*J. M. Barrie*

The Medical Imaging Conference (MIC) is the longest standing and most respected international scientific meeting on the physics, engineering and mathematical aspects of X-ray and nuclear medicine based imaging. Each year significant innovations in all forms of medical and biomedical imaging are presented at the MIC. The MIC offers a unique forum for specialists in detector technologies to interact and exchange ideas with imaging scientists and experts in various biomedical technologies. The MIC is an excellent venue for communication and discussion of novel medical and biomedical imaging technologies and uses. Authors are invited to submit papers describing original and innovative contributions to the field of biomedical imaging in the topic areas listed.

- PET and PET/CT Instrumentation
- SPECT and SPECT/CT Instrumentation
- X-ray CT Instrumentation
- PET and PET/CT Reconstruction
- SPECT and SPECT/CT Reconstruction
- X-ray CT Reconstruction
- Small Animal Imagers and Imaging
- Multi-modality Imagers and Imaging
- Application-Specific Imagers and Imaging
- Simulation Tools and Modeling
- Acquisition and Processing of Dynamic Data
- Quantitative Imaging and Compensation Techniques

- Image Processing, Evaluation and Quality Assessment
- Scintillator-Based Detection/Imaging Technologies
- Semiconductor Detection/Imaging Technologies
- X-ray and CT Technologies and Techniques
- Nonionizing Imaging Technologies and Techniques
- Clinical and Research Applications of Biomedical Imaging
- Imaging in Drug Development and Biological Research

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### Brass Band

When we jumped into Sicily, the units became separated, and I couldn't find anyone. Eventually I stumbled across two colonels, a major, three captains, two lieutenants, and one rifleman, and we secured the bridge. Never in the history of war have so few been led by so many.

*James M. Gavin*

**IEEE**

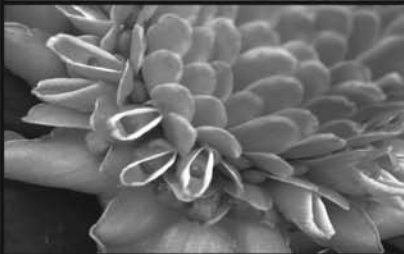
# HAWAII 2007

## ***Nuclear Science Symposium and Medical Imaging Conference***

**October 28 - November 3, 2007**

### ***PROGRAM***

- ◆ Plenary Sessions
- ◆ Oral Presentations
- ◆ Poster Presentations
- ◆ Topical Short Courses
- ◆ Refresher Courses
- ◆ Industrial Exhibits
- ◆ Companion Program
- ◆ Pre- & Post-Conference  
Tours



***Abstract Submission  
Deadline:  
May 11, 2007***



***nps*** NUCLEAR &  
PLASMA SCIENCES  
SOCIETY

HILTON HAWAIIAN VILLAGE  
BEACH RESORT @ SPA  
HONOLULU, HAWAII



### ***TOPICS***

Radiation Detectors, Electronics, Instrumentation,  
Homeland Security, Space, High Energy, Nuclear  
and Solid-State Physics

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



#### ***GENERAL CHAIR:***

Benjamin M. W. Tsui  
Johns Hopkins University

#### ***NSS CHAIR***

Ren-Yuan Zhu  
California Institute of Technology

#### ***MIC CHAIR***

Eric C. Frey  
Johns Hopkins University

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

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



**Graham Smith**  
*General Chair*

# SUMMARY REPORT 2006 IEEE NUCLEAR SCIENCE SYMPOSIUM, MEDICAL IMAGING CONFERENCE, AND ROOM TEMPERATURE SEMICONDUCTOR DETECTOR WORKSHOP

October 29 - November 4, 2006

Town and Country Resort & Convention Center, San Diego

<http://www.nss-mic.org/2006/>



**Chuck Britton**  
*NSS Program Chair*

The Nuclear Science Symposium, Medical Imaging Conference and the 15th International Workshop on Room Temperature Semiconductor X-and Gamma-ray Detectors were held on October 29 – November 4, 2006 at the Town and Country Resort & Convention Center in San Diego, California. The gathering also played host to a number of shorter workshops, providing timely presentations on Micropattern Detectors, Compton Scatter Imaging, Dual-modality PET/MRI, Hadron Therapy, GATE, and the Nuclear Radiology of Breast Cancer (NRBC). Together with a comprehensive set of short courses, an intensive exhibits program and a varied companion program, there was never a dull moment, and over 1600 registrants made this the largest attendance at a North American location, second only to Rome in 2004.

The 2006 conference committee consisted of twenty dedicated individuals, though in reality the execution of a meeting of this size can only be accomplished with the input of many additional volunteers; we were certainly blessed with a large number of the latter. The conference committee made only one formal visit to the Town and Country for preplanning, in late January 2006. We ensured that all material for the meeting, such as Posters,

Call for Papers, Web information, Program Booklet and so on, prominently displayed the graphic illustrated in Figure 1, helping recipients quickly make an association with this specific meeting.

The number of submissions of abstracts/summaries for the entire program was well over 1300, with which we were very satisfied. The breakdown between various sections of the program is shown in Table 1.

**Table 1: Abstract/Summary Submissions**

Nuclear Science Symposium	552
Medical Imaging Conference	587
Room Temperature Semiconductor	106
Special Focus workshops (six)	73
<b>Total</b>	<b>1318</b>

Considerable effort was made in seeking financial support for the meeting, to augment income from registration fees. To this end, the conference committee was able to raise close to \$100k, a result of the generous donations from institutions and commercial companies; the major part was put toward financial support for well over 100 students and postdoctoral scientists. One of several ways we acknowledged our sincere appreciation to these contributors was via a poster showing the respective logos of the institutions and companies. The full list of contributors is:

US Defense Threat Reduction Agency  
 US Department of Energy, Office of NonProliferation Research and Development  
 Siemens Molecular Imaging and Siemens Medical Solutions  
 Philips Medical Systems  
 Hamamatsu  
 ORTEC  
 Merck & Co., Inc  
 GE Healthcare  
 GlaxoSmithKline



**John Aarsvold**  
*MIC Program Chairman*



**Ralph James**  
*RTSD Program*



Figure 1 - Graphic of San Diego skyline and oversize giraffes that was used in all the advertising and publicity material.

As noted earlier, the final registration numbers exceeded those of any previous meeting held in North America. The specific numbers by category are shown in Table 2, while the geographic distribution is illustrated in the pie chart of Figure 2. The high number of complimentary registrations largely reflects the students and postdoctoral scientists (22 NSS/RTSD and 104 MIC) for whom we were able to waive the registration fee, courtesy of the contributors noted above.

**Table 2: Attendee categories**

IEEE Member	449
Non-IEEE member	614
IEEE student	74
Non-IEEE student	122
Complimentary	168
One-day only	86
Life member	5
Retired/Unemployed	15
Continuing Education	20
NRBC Workshop	9
Exhibitors	43
<b>Total</b>	<b>1605</b>

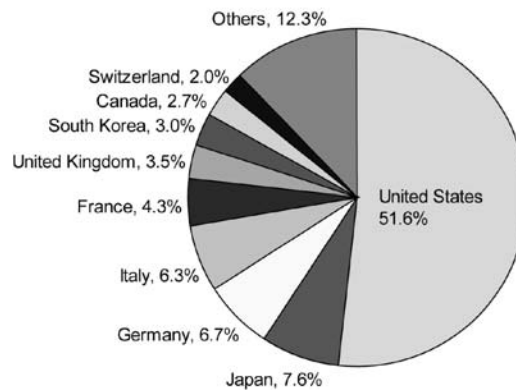
The entire meeting spanned eight days, beginning on Sunday, October 29, with the first day of Short Courses (more formally known as the Continuing Education Program). Stephen Derenzo and Jennifer Huber performed a masterful job in bringing together seven full-day, courses: it is unusual for none to be half-day. The courses were very well attended, as shown by the sign-up numbers in Table 3.

**Table 3: Sign-up for Continuing Education Program**

Integrated Circuit Front Ends (Sunday)	66
Interaction of Radiation with Matter	25
Nuclear Science for Homeland Security	52
Detectors for PET/SPECT (Monday)	41
Molecular Biology for Imaging	43
Small Animal Imaging (Tuesday)	16
Image Quality (Tuesday)	67
<b>Total</b>	<b>310</b>

The Nuclear Science Symposium (NSS) began on Monday, October 30. Following tradition, the first morning was given over entirely to plenary

**Geographical Distribution**



**Figure 2**

talks. Three prominent speakers had been invited, covering topics of extremely varied nature and of great national, and international, importance. Thom Mason, the director of the Spallation Neutron Source (SNS) at ORNL spoke first, on the development and recent commissioning of this flagship DOE funded facility, and what will be the world's most powerful spallation source. Then, Tony Tyson, University of California at Davis and director of the LSST, described the Large Synoptic Survey Telescope, a wide field telescope that will be capable of time-lapse digital imaging of faint astronomical objects across the entire sky. Finally, Daniel Ingersoll, ORNL, discussed the science and technology requirements of the next generation of nuclear power reactors. The NSS contributed papers were presented from Monday afternoon through the end of Thursday. Including posters, there were 45 sessions, requiring significant numbers of parallel presentations. The NSS program chairs, Chuck Britton and Vince Cianciolo, are to be congratulated on overseeing this large program and minimizing the degree of subject overlap.

Also on Monday afternoon, the 15th International Workshop on Room-Temperature Semiconductor X- and Gamma-Ray Detectors began. Chaired admirably by Ralph James (BNL) and Eugenio Perillo (INFN, Italy), this workshop, colloquially known as the RTSD, is held in conjunction with the NSS and MIC every other year, providing an environment for new and fruitful associations between the respective attendees.

The third major meeting, the Medical Imaging Conference, began in earnest on Wednesday November 1st, although there were two joint NSS/MIC sessions on the previous afternoon. John Aarsvold, Emory University, and Bruce Hasegawa, University of California at San Francisco, put together an incredible program.

## Agreed!

The trouble with the world is that the stupid are cocksure and the intelligent full of doubt.

*Bertrand Russell*

## Precocity

Many men would have arrived at wisdom had they not believed themselves to have arrived there already.

*Seneca the Younger*

## What a difference!

A rich man is nothing but a poor man with money.

*W.C. Fields*

## Marketing 101

We sell everything that nobody needs.

*Jack Guarnieri  
(pinball.com)*

Two pre-eminent scientists were invited as plenary speakers. First, Jan Schnitzer, director of the Sidney Kimmel Cancer Center in San Diego, presented his thoughts on a systems biology approach to cancer therapy, then Ron Nutt, Chairman and CEO of Advanced Biomarker Technologies in Tennessee, spoke on the role of PET and SPECT in molecular medicine. The MIC consisted of twelve serial sessions of contributed papers, and three substantial poster sessions, ending at the close of Saturday, November 4.

All of the above three main meetings had their respective “banquets.” The NSS luncheon was held at noon on Monday. During this function, Albe Dawson Larsen (SLAC) was presented with the 2006 Richard F. Shea Distinguished Member Award, L. Eric Smith (PNNL) was presented with the 2006 Radiation Instrumentation Early Career Award, and certificates were presented to Claudio Piemonte, Ed McKigney, Werner Riegler and Gabriella Carini for contributions to the field of Nuclear Radiation Measurements. The luncheon speaker, Jerry Hastings from SLAC, gave a riveting talk on the use of X-rays in time-resolving studies below a picosecond, with specific reference to the Linear Coherent Light Source (LCLS) now under development at SLAC. The RTSD held its “banquet” at Wednesday noon; this had a particularly nautical flavor, courtesy of Hornblower Cruises in San Diego harbor. The MIC dinner, on Friday evening, was widely acknowledged as the most spectacular, the event being held at Sea World. Tours of part of the adventure park were followed by dinner in the Nautilus Pavilion, the evening culminating in a private showing of the Shamu Show, a captivating and visually stunning performance from the killer whale. All three banquets were essentially sold-out, the numbers being shown in Table 4.

**Table 4: Banquet attendance**

NSS Luncheon	243
RTSD Luncheon	148
MIC Dinner	470

The MIC awards ceremony took place on Friday during one of the oral sessions. Ronald Jaszczak, Duke University, received the Edward J. Hoffman Medical Imaging Scientist Award.

**Table 5: Special Focus Workshops**

Sun. Oct. 29	Micropattern Gas Detectors (full-day)
Thur. Nov. 2	Innovative Techniques for Hadron Therapy (half day)
Thur. Nov. 2	Compton Scatter Imaging (half day)
Thur. Nov. 2	Bi-modality PET and MRI (evening)
Sat. Nov. 3	GATE (evening)
Sat./Sun. Nov.	Third Workshop on Nuclear Radiology of Breast Cancer (1 and half days)

Suleman Suli, University of Pennsylvania, received the 2006 Young Investigator Medical Imaging Science Award.

The largest gathering was at the Conference Reception, held on Wednesday evening on the hotel grounds, beside the palm trees and swimming pools, with well over 1000 attendees thoroughly enjoying the ambiance. In addition, a string octet from the Holland-Moritz Ensembles in San Diego played both classical and modern tunes inside the Terrace Pavilion.

A number of special focus workshops were held throughout the week. These (short) workshops were very well attended, with extra space required at the last moment for two of them. The workshops are detailed in Table 5.

Recently, the NPSS instituted an award to be given for the best student paper in both the NSS and MIC programs. The task of determining the awardees in this very worthy cause was taken extremely seriously by both pairs of program chairs, with subcommittees formed to look carefully at summaries, and then presentations, of those approximately 100 students who indicated their wish to be considered. We congratulate all who took part. In the end, the winners were as follows; NSS: best papers for Rafael Ballabriga (CERN) and Jonathan Britton (University of Tennessee), and runner-up Markus Stockner (CERN); MIC: best papers for Peter Olcott (Stanford University), Martin Judenhofer (University of Tuebingen) and Mingwu Jin (Illinois Institute of Technology), and runners-up Aarti Kriplani (SUNY, Stony Brook) and Feng Qiao (Rice University).

Forty three companies were represented in the Exhibits Program, ably chaired by Ron Keyser (ORTEC). We carefully planned the location of the exhibits close to the registration desk, and this seems to have maintained a high level of traffic for the exhibitors. The customer interaction was apparently high and of high quality. The Exhibitor Technical Sessions were well attended with “standing room only” at some sessions. It is encouraging that a number of exhibitors have already contracted for next year’s meeting in Hawaii.

The Companion Program held at least one tour every day (none on Sunday November 5). It was well planned and organized through the

diligent efforts of Anne Smith and Carolyn Hoffman. Merry Keyser and Lee Lampo provided much appreciated assistance in the running of the program. Day or half-day tours were enjoyed by over 200 guests/attendees to Old Town San Diego (Sunday), South of the Border (Monday), San Diego city (Tuesday), the Aolani Catamaran (Tuesday), La Jolla (Wednesday), SeaWorld (Thursday), Palomar Observatory (Thursday and Friday), San Diego Zoo (Friday), and Orfila Vineyards (Saturday).

The CIP committee was well represented by Uwe Bratzler; members of CIP continue to play an invaluable role in many important facets, especially their help and participation during the meeting. Under the CIP's delightful oversight, over 100 new applications for membership of IEEE and NPSS were received at their desk. Dora Merelli looked after technical support with her usual whirlwind efficiency.

Rounding off a most helpful and hard-working conference committee, Christina Sanders chaired the Registration process with great style, Local Arrangements were in the steady and capable hands of Ed Lampo, aided by Maxim Titov. The Treasurer's job was skillfully managed by Tony Lavietes, to whom credit should also go for bring-

ing the meeting back to the Town and Country hotel. There is no doubt that the hotel's very practical layout and its value for money warranted a return visit after the meeting was held there in 2001, and Tony seized the opportunity by negotiating a timely and favorable contract for 2006 very early on. Much of the accounting is now being finalized, and it appears that a very healthy surplus will be generated. Bernard Phlips, the Guest Editor, has one of the last duties, and we look forward to seeing the CD of the Conference Record soon in the New Year. Finally, I owe a huge debt of gratitude to my BNL colleagues, Bonnie Sherwood (Conference Coordinator), Bo Yu (Webmaster), and Jean-Francois Pratte (Assistant to General Chair) for their unending efforts in our many weekly planning meetings.

There are many volunteers who have gone unmentioned. However, if the main outcome was a meeting of excellent and timely science (which I believe is the case), with old and new friendships made, then that is reward in itself for all the hard work that everyone put in.

*Graham Smith can be reached at the Instrumentation Division, Brookhaven National Laboratory, Upton, NY 11973-5000, USA; tel: 1 631 344 4253; E-mail: gsmith@bnl.gov*

## 2008 IEEE NSS/MIC/RTSD: STATUS UPDATE

The Nuclear Science Symposium (NSS), Medical Imaging Conference (MIC), and 16th International Workshop on Room Temperature Semiconductor X- and Gamma-Ray Detectors (RTSD) will be held for the first time in Germany, in the culturally rich city of Dresden, on October 19-25, 2008, at the International Congress Center, Dresden.

This will be the third NSS/MIC outside North America. Attendance at the European-based NSS/MIC's has been strong from the beginning with about 1,300 participants in Lyon (2000), and increasing strongly since with over 1,800 participants in Rome (2004). It is anticipated that the Dresden 2008 conference will be the largest yet, with 2,000 participants or more.

Preparations for this major annual event for our world-wide science community are on schedule and in full swing. The site and conference venue have been determined and contracts are being secured, the extensive conference budget has been worked out and is approved, and the conference organizing committee is complete. Next steps include the plan-

ning of the scientific program as well as the detailed local arrangements and conference and attendee services preparations. Research Center Dresden Rossendorf (FZD), a German national physics laboratory near Dresden, will serve as the local organizing institution and has agreed to provide substantial support to the Conference and General Chair.

As the 2008 NSS/MIC General Chair, being also active in the NPSS Transnational Committee (TNC), I would like to encourage and welcome feedback and input from our world-wide community. I would like to encourage and welcome sharing of any ideas, suggestions, or any other comments you may have, related to the preparation work and shaping of this major event for our world-wide science community.

*For additional information, and to share feedback, ideas and suggestions, please contact the 2008 IEEE NSS/MIC General Chair Dr. Uwe Bratzler, who can be reached at CERN and TMU, European Organization for Nuclear Research, Physics Department, 1211 Geneva 23, Switzerland; E-mail: Uwe.Bratzler@cern.ch.*

## Outsourcing

Faith is much better than belief. Belief is when someone else does the thinking.

*Buckminster Fuller*



**Uwe Bratzler**  
General Chair

## PRESIDENT'S REPORT



**Jane Lehr**  
NPSS President

As you read this, spring is approaching and it is a time of renewal and rebirth. At NPSS, our renewal is underway and as I take the reins as NPSS President, I would like to start by thanking our new Past President, Bill Moses, for a job well done. He has given me two gifts: a well run society and a fine example of integrity based leadership. I would like to thank Igor Alexeff, who has finished his duties as Past President after many years of service to NPSS. In the spirit of renewal, I would also like to welcome our new Vice President, Craig Woody, who has filled a wide variety of roles within the Radiation Instrumentation community.

As I start my term as President of NPSS, I ponder how fortunate I am to be part of this organization. NPSS is in top shape, with all of our conferences doing well, both technically and fiscally. The three publications NPSS sponsors - *The Transactions on Nuclear Science*, the *Transactions on Plasma Science* and *Transactions on Medical Imaging*, are all doing well - with plans in progress to make them even better. The restructuring of TNS and TPS is near completion, with most of the Senior Editors selected in the various subject areas.

In preparation for my term as President, NPSS supported my attendance at the IEEE Technical Activities Board (TAB) meetings for the past year. Although I did not have a vote, I came to understand many of the issues that are most important to NPSS and IEEE and I feel well prepared for my new role. As the NPSS representative to TAB, I strongly believe that I best serve NPSS by being an active participant in TAB. To that end, I have been selected to serve on the IEEE TAB Publications Committee. This is an area where I have both interest and expertise. Moreover, the dissemination of information, in the form of publication, is our prime product. Significant changes may be on the horizon, and I look forward to being part of that.

NPSS is prospering because of its many talented, energetic and dedicated volunteers. If NPSS had a motto, I would suggest, "Many hands make for light work." The dedication of our volunteers and the

complexity of tasks they are willing to engage in is simply amazing. Of course, we are always interested in "new blood," and if you are willing to participate, I encourage you to contact either me or the chair of your technical committee to find out the way to best use your talents. Contact information can be found on the IEEE NPSS website at <http://ewh.ieee.org/soc/nps>.

Speaking of volunteering, if you have been at an NPSS sponsored conference this past year, you may have noticed some new faces at the IEEE NPSS membership booth. Christoph Ilgner has agreed to take on the role previously held by longtime volunteer Vern Price. NPSS extends its heartfelt thanks and a "Job well done!" to Dr. Price for his outstanding service and continuing assistance. We now recruit volunteers from the conference's own technical community to man the conference membership booth. Dr. Ilgner is soliciting and training volunteers for the booth for several of our conferences. Please contact him at [christoph.ilgner@cern.ch](mailto:christoph.ilgner@cern.ch) if you are interested. After numerous years of the decline in membership in virtually all IEEE Societies, NPSS maintained its level of membership in 2006, thanks to Drs. Price and Ilgner.

An increasing number of IEEE NPSS conferences are being held outside the U.S. Business practices in various cultures vary greatly from each other and from the U.S. The NPSS AdCom feels strongly that holding conferences outside the U.S. is valuable, but has struggled with the details. However, to date, we have not had a repository of information and "lessons learned" from our conferences held internationally. To that end, Patrick Le Dû has been appointed as a Liaison to this newly created post. He brings a vast amount of experience to this position.

In conclusion, we are widely considered to be one of the best run societies in IEEE. To maintain this level of quality, we need good people. Please consider getting involved.

*Jane Lehr, President of IEEE NPSS, can be reached at Sandia National Laboratories, MS1193, PO Box 5800, Albuquerque, NM 87185-1193; Phone+1 505 844 8554; E-mail: [jane.lehr@ieee.org](mailto:jane.lehr@ieee.org).*

## Boring!

When it comes to sex - or history, or politics, or opera - science can answer all questions, except the interesting ones.

Steve Jones



## SECRETARY'S REPORT

Our last AdCom meeting was held at the Town and Country Hotel and Resort, San Diego, California on November 4, 2006. This, our official Annual Meeting, was held, as is traditional, with the NSS/MIC meetings. And as usual, it was a time for goodbyes and a hearty thank you to each retiring AdCom member. These include Joe Benedetto (Radiation Effects); Grant Gullberg (Nuclear Medical and Imaging Sciences); Glenn Knoll (Radiation Instrumentation) and Sandra Biedron (Particle Accelerator Science and Technology) who completed Patrick O'Shea's term when he had to step down. We do, however, welcome Sandra back as a new member with a full term. In addition, Richard Jacobsson, AdCom Class of 2009 stepped down because of unexpected demands on his time, and Dan Jobe completed his term as Chair of the Plasma Science and Applications TC. This was also an election year and we had two excellent candidates for Vice President/President-elect. We are delighted to welcome Craig Woody to this new position. We also change leadership with Jane Lehr taking over as President and Bill Moses, after a long haul in the presidency filling both his term and the remainder of the late Ed Hoffman's, becomes past president and Nominations chair. I think both he and Peter Winokur, who remained as past president during this time, have both breathed deep sighs, despite their outstanding leadership over these several years. We welcome new AdCom members Eric Frey, Jim Schwank and Rick Van Berg whose brief biographies appear below. We also welcome Ron Gilgenbach, new chair of the Plasma Science and Applications TC and Christoph Ilgner as new Membership chair. In addition, this was Stuart Long, our Division IV Director's last visit with us. Edward Della Torre of the Magnetics Society has taken over as Division IV Director. His biography also appears below.

In addition to election of a new Vice President/President-elect, the other actions at this meeting included:

- NPSS authorizes the Steering Committee of T-MI to allocate up to \$2,000 for a one time expense to cover the costs of scanning

in the text of the early issues of T\_MI that are not currently available in digital form on IEEE Explore. The motion was replaced with that below.

- NPSS AdCom strongly supports the proposal to scan the text of the early issues of TMI that are not currently available in digital form on IEEE Explore.. The motion carried
- \$10,000 of NPSS funds will be made available to each Technical Committee each year to fund travel grants to their annual or biennial conference held that year for graduate students who are IEEE NPSS members. Each Technical Committee participating in this program will appoint a committee to evaluate the applications and to administer the grants. Preference in granting the funds should be given to students who are planning to present a paper, and to students with no other visible means of support.. The motion was withdrawn.

An issue that received a lot of discussion was how to pay for infrastructure costs. Some are quite clear, such as ordering an awards plaque, but others are hard to pin down. Hal Flescher has worked diligently with a finance committee of the IEEE Board to address this and a proposal will be submitted to the entire board for consideration. Stuart Long, the Division IV director at the time of the meeting also discussed this, along with an overview of IEEE's makeup and revenue streams

Again, we are urged to get conference books closed as rapidly as possible, preferably within the year the conference was held. More stringent reporting will be required between planning and closing at some set interval.

AdCom will have met on February 3, too late to make a report in this Newsletter. The next meeting will be on June 23 in Albuquerque, NM between the PPST and SFE conferences and PAC.

*Albe Dawson Larsen, NPSS secretary and Newsletter Editor, can be reached at the Stanford Linear Accelerator Center, MS66, 2575 Sand Hill Road, Menlo Park, CA 94025; Phone +1 650 926 2748; Fax: +1 650 926 5124; E-mail: amlarsen@slac.stanford.edu*



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

---

**Steak but no  
sizzle**

**He knew every-  
thing about  
literature except  
how to enjoy it.**

*Joseph Heller*

## DIVISION IV DIRECTOR

*Ed. Note: We welcome Ed Della Torre, our new Division IV Director, and thank Stuart Long for his service and for his visits with us.*



**Edward Della Torre**  
Division IV Director

**E**dward Della Torre received the B.E.E. from Brooklyn Polytechnic Institute, the M.Sc. in electrical engineering from Princeton University, the M.Sc. in physics from Rutgers University, and the D.E.Sc. degree from Columbia University. He has been a professor at George Washington University since 1982. He also taught at Rutgers, McMaster, and Wayne State Universities, and served as Chairman of the Electrical and Computer Engineering Departments at the latter two universities. He performed research at the Bell Laboratories, the University of Toronto, and the National Institute of Standards and Technology during sabbatical years.

He is a Life Fellow of the IEEE and a Fellow of the American Institute for Physics. He is the author or coauthor of over 250 technical papers in refereed publications and three books. He has made over 200 conference pre-

sentations, holds 18 patents, and is a regular reviewer for many technical journals. He has chaired several IEEE Conferences.

IEEE Activities – (S'53-A'55-M'57-SM'65-F'79-LF'97) COMMITTEES/BOARDS: Technical Activities Board, 2001-02. SOCIETIES: Magnetics Society: Conference Executive Committee, Member, 1990-03; Past President, 2000-02; President, 1999-00; Vice President, 1986-87. CONFERENCES: INTERMAG Conference: Chairman, 1996; U.S. Chairman, 1993; Local Chairman, 1989; Program Co-Chairman, 1986; Publicity Chairman, 1975; Program Committee Member for many conferences.

*Edward Della Torre can be reached at the Institute for Magnetics Research; The George Washington University, Washington, DC 20052; Tel: +1 202 994-0410; Fax: +1 202 994-0227; E-mail: edt@gwu.edu.*



**Sandra Biedron**  
Particle Accelerator  
Science and  
Technology

**S**andra Biedron is the reelected member of AdCom representing the Particle Accelerator Science and Technology community. Since

she was featured in the March 2006 issue we are not repeating her biography here, but welcome her back to a full term on AdCom.

## CLASS OF 2010

### The Newly Elected AdCom Members

#### Sandra Biedron

#### Eric Frey



**Eric Frey**  
Nuclear Medical and  
Imaging Science

**E**ric C. Frey, Ph.D., is currently an Associate Professor in the Division of Medical Imaging Physics in the Department of Radiology and Radiological Sciences at Johns Hopkins University. He has been a member of IEEE and the NPSS since 1991 and a Senior Member since 2005. He was the Deputy MIC Chair for the 2001 IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC), a member of the Nuclear Medical Imaging and Sciences technical council (NMISTC) in 2001-2002, and a member of the site selection committee for the 2005 NSS/MIC; he will be the MIC Chair for the 2007 NSS/MIC.

He is a regular reviewer of manuscripts for IEEE TMI and TNS as well as other scientific journals.

He has been a regular participant in the NSS/MIC since 1989 and reviewed abstracts for the meeting since 1993. His major research interests are in SPECT image reconstruction with compensation for image degrading factors, dual isotope imaging, quantitative imaging for targeted radionuclide therapy dosimetry, and reconstruction and instrumentation for x-ray micro-computed tomography applications. He has been the advisor of 5 Ph.D. students, the P.I. of 4 NIH-funded grants, and an author of more than 64 refereed publications in scientific journals.

## James R. Schwank

James R. Schwank (S'78-M'78-SM'89-F'94) received his B.S., M.S., and Ph.D. degrees in Electrical Engineering from the University of California at Los Angeles. Jim joined Sandia National Laboratories in 1979, and is a Principal Member of the Technical Staff in the Radiation Physics, Technology, and Assurance Department. At Sandia, Jim has been involved in programs investigating the mechanisms of radiation effects in semiconductor devices (including the discovery of the rebound effect), developing radiation-hardened devices, and improving hardness assurance test methods. He is currently investigating SOI technology for radiation-hardened applications and is the inventor of the BUSFET radiation-hardened SOI transistor. Jim has participated actively in numerous activities within the radiation effects community. For the NSREC, he has served as General Conference Chairman,

Short Course Chairman, Short Course Instructor, Liaison to RADECS, and Publicity Chairman. In addition, he was a Technical Program and Short Course Chairman for the Hardened Electronics and Radiation Technology (HEART) Conference, Guest Editor for the *Journal of Radiation Effects* and RADECS, and served on the RADECS Conseil d'Administration and the IEEE SOI Conference Technical Program Committees. Jim is the author of more than 150 publications, encyclopedia articles, and short courses including papers that received ten NSREC and three HEART Conference Outstanding Paper Awards. He is also the recipient of an R&D 100, an Industry Week Technology, and a Discover Magazine Technology Award, and is on the ISI Highly Cited list of most highly cited researchers worldwide. Jim is a Fellow of the IEEE and a member of the NPSS.



**James Schwank**  
*Radiation Effects*

## Rick Van Berg

Rick Van Berg (M'78) directs the University of Pennsylvania High Energy Physics Instrumentation and Engineering group. This group specializes in front end and data acquisition electronics for major HEP experiments with expertise ranging from front end ASIC development through DAQ code architecture. The group has designed and built whole experiments (the electronics and DAQ chain for Kamiokande II and the Sudbury Neutrino Observatory, SNO) and parts of larger experiments (the wire chamber front end and time of flight system for CDF and the wire chamber front end for the ATLAS TRT). The group is also using its expertise in fast electronics to effect improvements in PET scan-

ning and in a series of novel radiation and optical probes for medical use.

Mr. Van Berg received his BA from Haverford College, Haverford Pa., in 1964 and his MS from the University of Pennsylvania, Philadelphia, in 1966. He has been on the technical staff at Penn since 1966. He is presently a member of the SNO, ATLAS, and LSST collaborations. He has authored or co-authored numerous technical and physics articles in refereed journals. He is active in promoting science for high school students as lead for the Penn Quarknet project and as a teacher in the Penn Summer Science Academy. He is an associate editor of *Transactions on Nuclear Science* and was Deputy Program Chair for the NSS in 2002.



**Rick Van Berg**  
*Radiation Instrumentation*

## New Technical Committee Chair

Ronald M. Gilgenbach is a professor in the Nuclear Engineering and Radiological Sciences Department and also serves in the Applied Physics Program at the University of Michigan. He received his Ph.D. in Electrical Engineering from Columbia University in 1978. His B.S. (1972) and M.S. (1973) degrees were earned at the University of Wisconsin. In the early 1970's he spent several years as a Member of the Technical Staff at Bell Labs. From 1978-1980, he worked at the

Naval Research Lab (NRL) and Oak Ridge National Laboratory. Dr. Gilgenbach joined the faculty of the University of Michigan in 1980 and became Director of the Plasma, Pulsed Power and Microwave Laboratory. In 2002 he founded the Bioelectromagnetism Laboratory, which he also directs. His research at Michigan has concentrated on the plasma physics and applications of high-power electron beams and microwaves, as well as laser plasmas, laser diagnostics, beam-materials processing,



**Ronald Gilgenbach**  
*Chair, Plasma Science and Applications TC*

biological interactions of radio-frequency and ultrawideband radiation, and plasma propulsion for space. He has had research interactions with scientists at Air Force Research Lab, Sandia National Labs, NASA Glenn, L-3 Communications Corp., Northrop Grumman Corp., General Motors Research Labs, Los Alamos National Lab, Fermilab, and the Naval Research Lab.

Dr. Gilgenbach received the NSF Presidential Young Investigator Award and the 1997 Plasma Sciences and Applications Committee Award from the IEEE. He is a

Fellow of both the American Physical Society and the IEEE. Prof. Gilgenbach is an Associate Editor of the *Physics of Plasmas* and is currently the Chair Elect of the IEEE Plasma Science and Applications Technical Committee. He has published some 130 articles in refereed journals and has supervised 38 graduated Ph.D. students.

*Ron Gilgenbach can be reached at the University of Michigan, Dept. of Nuclear Engineering, Cooley Bldg, North Campus, Ann Arbor, MI 48109; Phone +1 734 763 1261; Fax: +1 734 763 4540; E-mail: rongilg@umich.edu.*

## New Functional Committee Chair



**Christoph Ilgner**  
Membership Chair

I am currently a scientific employee at the University of Dortmund, Germany, where I run a solid-state detector development project for the LHCb experiment at CERN. Artificial diamond sensors are planned to protect the LHCb detector against possible adverse beam conditions of CERN's future Large Hadron Collider.

After my studies of physics at the University of Munich, Germany and Munich Technical University, from which I graduated in 1996, I did some physics teaching for engineering students at the Bundeswehr University, as part of the education of future officers in the German Federal Armed Forces.

The first detector development project I became involved in was the large-scale production of straw drift tubes for the COMPASS experiment at CERN. For this I spent four years at the Joint Institute for Nuclear Research in Dubna, Russia. Afterwards I did some technical coordination for the COMPASS experimental collaboration. As a CERN

fellow, I then switched over to solid state detector applications in high-energy physics, also using passive sensor techniques for the dosimetry in test beam experiments, dealing with the radiation hardness of sensor materials. So also the effects of ionizing radiation in general caught my interest, including radiation protection.

As an official CERN guide, I devote part of my leisure time in explaining to an interested public what particle physics is about, and I hope that skills I might have acquired in this activity will also help me to serve the IEEE Nuclear and Plasma Sciences Society as the new membership chair. I will try to be a help to any member that needs assistance; thank you for your trust.

*Christoph J. Ilgner, European Organization for Nuclear Research (CERN) and University of Dortmund, Germany, can be reached at CERN, Dept. ULB-PH 1211 Geneva 23, Switzerland; Phone: +41-22-76-72969 Fax: +41-22-76-79080; E-mail: christoph.ilgner@cern.ch.*

## TECHNICAL COMMITTEES

### COMPUTER APPLICATIONS IN NUCLEAR AND PLASMA SCIENCE TECHNICAL COMMITTEE



**Jean-Pierre Martin**  
Chair, Computer Applications in Nuclear and Plasma Sciences TC

The main event of the CANPS this year will be the 15th occurrence of the IEEE NPSS Real Time Conference. It will be held at Fermilab, from April 29th to May 4th, 2007. Margaret Votava, member of the FNAL computing division, is the general

chairperson of the conference (<http://computing.fnal.gov/cd/rt07/>). Several adaptations of this conference are foreseen for the 2007 edition. In addition to the traditional Plasma, Particle and Nuclear Physics real time aspects, we want to promote new fields. For

example, biomedical imaging real time data acquisition and processing is becoming a real challenge for the future. There were already a few presentations in this field at the RT2003 and RT2005 conferences, and the synergy with our traditional activities was greatly appreciated. Also, the decision to build ITER, the next generation of experimental fusion reactors, will generate new challenges in real time control systems. These two examples show how rich and exciting the Real Time field will be in the near future.

At the opening of the conference, on Sunday, April 29th, there will be a one-day workshop on ATCA. The workshop is planned to explore the merits of the Advanced Telecommunications Computing Architecture (ATCA) for use by the real-time science community. Our goal is to provide information that will assist attendees in making design decisions about utilizing ATCA hardware and associated software to achieve

high availability in large projects like the ILC. The morning session consists of two tutorials on ATCA hardware and software offered by experts in the telecommunications field. The afternoon will include example projects from the NPSS community, a panel discussion of ATCA suitability and alternatives, and a questions and answer period with informal demos.

Due to the small size of the conference (~200 participants), and the broad diversity of Real Time applications covered, the RT conference is the ideal forum for studying the impact of new industrial standards such as ATCA, just as it has been in the past for NIM, CAMAC, FASTBUS and VME.

*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.*

## Fusion Technology Technical Committee Annual Report

This past year, 2006, was a relatively quiet year for the Fusion Technology Committee (FTC).

The 21st Symposium on Fusion Engineering (SOFE) had already passed, and the 22nd was still in early planning. The finances for the 21st SOFE were closed well in advance of the IEEE deadline, and the final conference report was published in March: <http://www.ieee.org/organizations/pubs/newsletters/npss/0306/21st.html>

Two changes occurred in the membership of the FTC. Mark Tillack (UC San Diego) succeeded Phil Heitzenroeder as the chair of the FTC in January, and Wayne Meier (Lawrence Livermore National Laboratory) replaced long-time committee member Dick Foley. As an appointive committee, changes in the FTC do not require elections. The chair is nominated by a vote of the committee itself, and ratified by the NPSS President. Similarly, new committee members are approved by vote of the committee and ratified by the chair.

The FTC committee maintains a web site at <http://aries.ucsd.edu/PUBLIC/NPSS-FT/>. There you can find more information regarding the membership, symposia and awards.

The latest recipients of Fusion Technology awards, delivered at the 21st SOFE, were Charles Baker, UC San Diego, “for his leader-

ship in the development of fusion technology and the quest to build future fusion power plants, for his leadership of the US ITER fusion efforts, and for his leadership of the US Virtual Laboratory for Technology,” and Bradley Nelson, Oak Ridge National Laboratory, “for his innovative technical contributions to the engineering of fusion experiments and his exceptional leadership in the design and construction of experimental fusion facilities.”

Award nominations for 2006 and 2007 are now being solicited. Instructions for nominating a candidate can be found at the FTC web site.

Planning for the 22nd SOFE is underway. The meeting is scheduled for June 17-22 of 2007, to be collocated at the Albuquerque Convention Center together with ICOPS and the Pulsed Power Conference. The General Chair will be Dennis Youchison and the Technical Program Chair will be Michael Ulrickson. Both are from Sandia National Laboratories. For more information regarding the 22nd SOFE, please visit the symposium website at <http://sofe22.sandia.gov/>

*Mark Tillack, chair of the Fusion Technology Committee, can be reached at the University of California in San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0417. Phone +1 858 534 7897; E-mail: mtillack@ucsd.edu.*

### RIP

Nice guys finish last, but we get to sleep in.

*Evan Davis*



**Mark Tillack**  
Chair, Fusion  
Technology TC

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



**Tom Lewellen**  
Chair, Nuclear Medical  
and Imaging TC

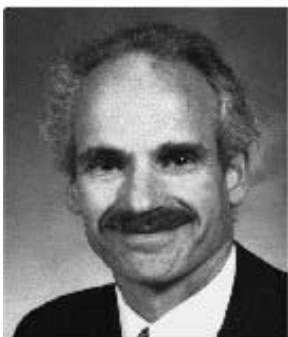
We welcome Eric Frey as the AdCom member at large from the NMISC community. He attended the AdCom meeting in October in San Diego and will do an outstanding job. We managed to get behind on electing the new board members. The election results were not available during our normal October business meeting at the 2006 NSS/MIC conference. However, I am happy to announce that our new board members are: M'Hamed Bentourkia, Zhenghong Lee, Robert Miyaoka, Lukas Pichl, and Yiping Shao.

### **MIC 2006**

Once again, the NSS/MIC meeting went very well indeed. The attendance for MIC was on par with 2005 and the papers were excellent. Congratulations to all who worked on the 2006 meeting. John Aarsvold (MIC chair) and his team were particularly successful in attracting outside funds to support the meeting and we hope those lines of support can be continued. Certainly, the MIC dinner at Sea World will be one many of us will remember for a long time (particularly those who were soaked by Shamu during the killer whale show).

### **MIC 2007**

This meeting will be held at the Hilton Hawaiian Village, Honolulu, Oct. 26 -Nov. 3, 2007. The general chair, Ben Tsui (Johns Hopkins) and his team are well along in preparations. They have had some challenges since we expect the space to be a bit tight for the meeting as it has evolved over the last two years. Eric Frey (Johns Hopkins) is the MIC chair, and Magnus Dahlbom is deputy MIC chair. The web site is up and we expect much more additional information to appear on it in the near future.



**Tim Oldham**  
Radiation Effects  
Chairman

The 2008 NSREC will be held in Tucson, AZ at the new Starr Pass J. W. Marriott Hotel, July 14-18. The conference site is a spectacular desert location in the mountains above the city. The Conference Chairman is Paul E. Dodd, of Sandia National Laboratories, pedodd@sandia.gov.

### **MIC 2008**

The general chair for this meeting is be Uwe Bratzler. The meeting will be held at the conference center in Dresden, Germany. The contract with the conference center has been signed and more information on the meeting is presented elsewhere in this newsletter. The web site is not yet on-line, but we should be seeing it in the near future. The committee is planning on a large meeting based on the European response to the meetings in Lyon and Rome.

### **MIC 2009**

The contract for 2009 should be signed by the time this newsletter is published. 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). The general chair is Richard Lanza and the committee is being formed. 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 site selection committee is now working on the 2010 site. Too early to report any details, but several sites on both the East and West coast of the United States are under consideration.

*Tom Lewellen, Chair of the Nuclear Medical and Imaging Sciences Technical Committee, can be reached at Radiology, Nuclear Medicine, NW-0040, University of Washington Medical Center, PO Box 357897, Seattle, WA 98195; Phone: +1 206 543 2365; E-mail: [tkldog@u.washington.edu](mailto:tkldog@u.washington.edu).*

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## RADIATION EFFECTS TECHNICAL COMMITTEE

### Future NSREC Conference Plans

The 2009 NSREC will be held in Quebec, Canada at the Quebec Hilton and the Quebec Conference Center, July 20-24. The conference site overlooks the St. Lawrence River and the walled city of Quebec. The Conference Chairman is Mark A. Hopkins, of Aerospace Corp., [mark.a.hopkins@aero.org](mailto:mark.a.hopkins@aero.org).

The 2010 NSREC is still in the site selection process with Conference Chairman Joseph M. Benedetto, of RT-Micro, Inc., joseph.benedetto@micro-rdc.com

### MEMBER-AT-LARGE ELECTED

Marty Shaneyfelt was elected Junior-Member-at-Large of the Radiation Effects Steering Group during the annual Open Meeting at the 2006 Nuclear and Space Radiation Effects Conference (NSREC).

Marty R. Shaneyfelt received his B.S. degree in Electrical Engineering from the University of Nebraska, Lincoln, in 1984, and his M.S. degree in Electrical Engineering from the University of New Mexico in 1990. From 1984 to 1990 he worked on technology development and manufacturing of radiation-hardened integrated circuits for Allied-Signal Microelectronics Operation, Albuquerque, NM. Marty joined Sandia National Laboratories in 1990, where he is a Distinguished Member of the Technical Staff in the Radiation Physics, Technology, and Assurance Department. At Sandia, he has been involved in numerous research activities associated with developing radiation-hardened bulk and SOI CMOS technologies, characterizing the physical mechanisms responsible for the radiation response of ICs, developing hardness assurance approaches, and addressing the limitations of using commercial technologies in radiation environments. Marty has authored or co-authored more than 130 publications, including eight NSREC Outstanding Conference Papers and two Hardened Electronics and Radiation Technology (HEART) Conference Outstanding Papers. He has served as General Conference Chairman, Publicity Chairman, Local Arrangements Chairman, Session Chairman, and Finance Chairman for the IEEE NSREC and Vice-Chairman of

Publications of the Radiation Effects Steering Group. Marty is a Fellow of the IEEE and a member of the NPSS.

### OUTSTANDING AND MERITORIOUS PAPERS AT THE 2006 NUCLEAR AND SPACE RADIATION EFFECTS CONFERENCE

2006 NSREC Outstanding Conference Paper Award is:

*Statistical Analysis of the Charge Collected in SOI and Bulk Devices under Heavy Ion and Proton Irradiation—Implications for Digital SETs*, V. Ferlet-Cavrois, P. Paillet, M. Gaillardin, D. Lambert, J. Baggio, J. R. Schwank, G. Vizkelethy, M. R. Shaneyfelt, K. Hirose, E. W. Blackmore, O. Faynot, C. Jahan, and L. Tosti.

The winner of the 2006 Outstanding Student Paper Award is:

*Single-Event Tolerant Latch Using Cascode-Voltage Switch Logic Gates*, Megan C. Casey, Bharat L. Bhuvu, Jeff D. Black, Lloyd W. Massengill, Oluwole A. Amusan, and Arthur F. Witulski.

The winner of the 2006 Outstanding Data Workshop Presentation Award is:

*Total Dose and Dose Rate Response of Low Dropout Voltage Regulators*, R. L. Pease, G. Dunham, and J. Seiler.

*Tim Oldham, Chair of the Radiation Effects Technical Committee, can be reached at NASA Goddard Space Flight Center, Greenbelt, MD 27701-0001; Phone: +1 301286 5489; Fax: +1 301 286 4699.*

*Teresa Farris, Publicity Chair for the Radiation Effects Steering Group, can be reached at Aeroflex Corp., Phone: +1 719 594-8035*



**Teresa Farris**  
Radiation Effects  
Publicity Chair



**Marty Shaneyfelt**  
Junior Member-at-  
Large



**Peter Winokur**  
Awards Committee  
Chair

## FUNCTIONAL & APPOINTIVE COMMITTEES

### AWARDS COMMITTEE

### CALL FOR NOMINATIONS FOR NPSS AWARDS DUE MAY 15, 2007

The Nuclear and Plasma Sciences Society gives three different categories of awards each year. Some awards are given by the Society and others are given by its Technical Committees. In addition to Society and Technical Committee Awards, NPSS

Sponsored Conferences that have Short Courses solicit nominations for Paul Phelps Continuing Education Grants. These grants are intended either for tuition in NPSS Sponsored Short Courses, or for partial or total travel expenses to attend NPSS Short

## Call me mister

Degrees are like  
false teeth.  
You'd rather not  
be without them,  
but you don't  
flaunt the fact  
you've got them  
to the world.

Godfrey Smith

Courses. These grants are available for outstanding Student Members of NPSS and unemployed members of NPSS who need assistance in changing career directions.

The deadline for Society award nominations is May 15, 2007. All nomination forms and supporting materials must be received by the deadline to be considered. Nomination forms for the Society Awards may be obtained on the NPSS web site at <http://www.ewh.ieee.org/soc/nps/awards.htm> or by contacting the awards chair. The Society awards comprise the following:

### **RICHARD F. SHEA DISTINGUISHED MEMBER AWARD**

**Description:** To recognize outstanding contributions through leadership and service to the NPSS and to the fields of Nuclear and Plasma Sciences.

**Prize:** \$2,000, plaque, and certificate.

**Funding:** Funded by the IEEE Nuclear and Plasma Sciences Society.

**Eligibility:** Any member of the IEEE and NPSS who has contributed to the fields of nuclear and plasma sciences through leadership and service.

**Basis for Judging:** Selection criteria are:

- a. Leadership roles and leadership quality;
- b. Innovative and important contributions to Society activities;
- c. Service and dedication to the NPSS;
- d. Technical achievements.

**Presentation:** One award presented annually at an NPSS sponsored meeting chosen by the recipient.

### **NPSS MERIT AWARD**

**Description:** To recognize outstanding technical contributions to the fields of Nuclear and Plasma Sciences.

**Prize:** \$2,000, plaque, and certificate.

**Funding:** Funded by the IEEE Nuclear and Plasma Sciences Society.

**Eligibility:** Any individual who has made technical contributions to the fields of Nuclear and Plasma Sciences.

**Basis for Judging:** Selection criteria, in order of importance are:

- a. Importance of individual technical contributions;
- b. Importance of technical contributions made by teams led by the candidate;
- c. Quality and significance of publications and patents;
- d. Years of technical distinction;

e. Leadership and service within the fields of Nuclear and Plasma Sciences and related disciplines.

**Presentation:** One award presented annually at an NPSS sponsored meeting chosen by the recipient.

### **NPSS EARLY ACHIEVEMENT AWARD**

**Description:** To recognize outstanding contributions to any of the fields making up Nuclear and Plasma Sciences, within the first ten (10) years of an individual's career.

**Prize:** \$1,800, plaque, and certificate.

**Funding:** Funded by the IEEE Nuclear and Plasma Sciences Society.

**Eligibility:** Member of the IEEE NPSS who at the time of nomination is within the first ten (10) years of his or her career within the field of interest of NPSS.

**Basis for Judging:** Three (3) letters of recommendation, publications and/or reports, patents, etc. which demonstrate outstanding contributions early in the nominee's career.

**Presentation:** At any major NPSS sponsored conference chosen by the recipient.

### **NPSS GRADUATE SCHOLARSHIP AWARD**

**Description:** To recognize contributions to the fields of Nuclear and Plasma Sciences.

**Prize:** \$500, certificate, and one-year paid membership in the NPSS.

**Funding:** Funded by the IEEE Nuclear and Plasma Sciences Society.

**Eligibility:** Any graduate student in the fields of Nuclear and Plasma Sciences.

**Basis for Judging:** Evidence of scholarship such as academic record, reports, presentations, publications, research plans, related projects and related work experience. Participation in IEEE activities through presentations, publications, student Chapter involvement, etc., will also be considered.

**Presentation:** Up to four (4) awards presented annually. Check and certificates sent to nominator to be presented at a special occasion at the winner's institution.

### **PAUL L. PHELPS AWARD**

**Description:** The Paul L. Phelps provides travel grants to attend short courses at IEEE NPSS meetings.

**Prize:** Several travel grants per NPSS conference.

**Funding:** Funded by the IEEE Nuclear and Plasma Sciences Society.



**Eligibility:** Any graduate student in the fields of Nuclear and Plasma Sciences, as well NPSS members who are presently unemployed and have trouble obtaining travel funds. Each grantee must attend a short course.

**Basis for Judging:** Each conference shall have an appointed chairman to handle Phelps travel grants. The amount of funding per conference is determined by the short course attendance at the previous conference. (Consult the IEEE NPSS Treasurer.) This amount may then be subdivided at the discretion of the appointed chairman to accommodate several recipients. Application for the grant is by a letter to the appointed chairman and/or the conference chairman. The letter will convey the need for the grant, as well as biographical and scientific information to demonstrate the scientific capability of the potential grantee.

**Presentation:** A check will be sent to each grantee, preferably well before the conference, but as soon as possible in the case of late application.

In addition to Society Awards, most of the Technical Committees under the IEEE NPSS umbrella have their own awards. These awards are in general funded out of conference budgets. Once again, details are available on the NPSS web site. A listing of Technical Committee Awards follows.

1. Computer Applications in Nuclear and Plasma Sciences Award;
2. Radiation Effects Award;

3. Radiation Instrumentation Early Career Award;
4. Radiation Instrumentation Outstanding Achievement Award;
5. Fusion Technology Award;
6. Particle Accelerator Science and Technology Award;
7. Plasma Science and Applications Award;
8. Edward J. Hoffman Medical Imaging Scientist Award;
9. Young Investigator Medical Imaging Science Award;
10. Erwin Marx Award;
11. Peter Haas Pulsed Power Award;
12. Outstanding Pulsed Power Student Award; and
13. Best Student Paper Awards.

Finally, there are an abundance of high-level awards obtainable directly from the IEEE, which can be found on the IEEE web site at <http://www.ieee.org/portal/pages/about/awards/index.html>. As the new Awards Chairman, I need to learn more about these awards. I'm informed by the previous Awards Chairman, Igor Alexeff, that only one member of NPSS has received one of these incredibly prestigious awards in NPSS's 30 year history. Let's see if we can win another!

*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](mailto:p.winokur@ieee.org).*

## COMMUNICATIONS COMMITTEE

The function of the NPSS is to serve its members and the fields of science and engineering in its field of interest. It is fair to say that the NPSS actually serves several fields of interest as defined by the journals and the conferences.

NPSS is a Society of all its members and without the active help of members, journals would not be published and meetings would not be organized. The profession relies on the volunteerism of its members to ensure that communication is facilitated that stimulates innovation and accelerates progress. In addition, the printed record provides an archive of progress in our fields and help, inspiration, and stimulation to those who do not attend meetings.

If the professionals in the field are not fully aware of the opportunities for communication with their peers and do not make use of these, they and the community both suffer. It is the job of the Communications Committee to prepare and provide the tools to ensure that people are aware of these opportunities. This also has a spin-off of educating the public of the work we do and the importance of this work.

With a new President of the NPSS this year with a two-year term, we review and prepare new material and by the time that this newsletter is in print, this job will be well underway. In addition, the membership booth that is used at meetings will be enhanced and extended this year.

## Self-cure

I hate to advocate drugs, alcohol, violence or insanity to anyone but they always worked for me.

*Hunter S. Thompson*



**Peter Clout**  
Chair, Communications Committee

I encourage you to 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! 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 with the activities 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 87544-4031; Phone: +1 505 662-2484; Fax: +1 505 662-3956; E-mail: clout@vista-control.com.*

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## NOMINATIONS COMMITTEE

### Candidates Sought for Elected AdCom Positions



**Bill Moses**  
Nominations  
Committee Chair

Are 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 (wwmoses@lbl.gov) by June 1 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, NPSS Nominations Chair, can be reached at the Lawrence Berkeley National Laboratory, MS 55-12, One Cyclotron Road, Berkeley, CA 94720 USA; Phone: +1 510 486-4432; Fax: +1 510 496-4768; E-mail: wwmoses@lbl.gov.*

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### Tool for the job

Man invented language to satisfy his deep need to complain.

Lily Tomlin

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## CONSTITUTION AND BYLAWS COMMITTEE

*Ed Note: Below is the new version of our Constitution and Bylaws, approved by AdCom at its Feb. 3 meeting held in San Antonio, TX. It will be presented to the IEEE Technical Activities Board for approval, barring dissent from the NPSS community at large. Any comments should be sent to amlarsen@slac.stanford.edu to arrive prior to May 15, 2007.*

The revision to the NPSS Constitution and Bylaws has been completed. The revision includes updates to the documents by aligning the terminology and structure of the C&BL with changes that had occurred in AdCom. This includes such changes as the restructuring of the Publications Functional Committee. Other changes allow for the Vice Chair of the Transnational Technical Committee to have voting privileges when acting as alternate for the Chair. The rationale for this inclusion is that the likelihood of the Transnational Committee Chair missing AdCom meeting is relatively high because of travel requirements.

Several modifications brought the practices of NPSS into accordance with those of IEEE or wrote down practices we already follow. An example is that the Constitution now mandates that NPSS use the same fiscal year as IEEE, which NPSS, in fact, has done for many years. The revision to the Constitution and Bylaws also established a policy of visitors to AdCom meeting, and if necessary, their removal, and a proviso to remove AdCom members from office. IEEE has released a list of “Must Haves” for inclusion in every IEEE Societies Constitution and Bylaws with which NPSS is now compliant.

# IEEE Nuclear and Plasma Sciences Society

## Constitution and Bylaws

January 2007  
Constitution

### ARTICLE I - NAME AND OBJECT

Section 1. This organization shall be known as the IEEE Nuclear and Plasma Sciences Society.

Section 2. The Society's purpose shall be scientific and educational in character. The Society shall strive for the advancement of the theory and practice of electrical and electronic engineering and of the allied arts and sciences and for the maintenance of high scientific and technical standards among its members, all in consonance with the Constitution and Bylaws of the IEEE and with special attention to such aims within the field of interest of the Society, as hereinafter defined.

Section 3. The Society shall aid in promoting close cooperation and exchange of technical information among its members and affiliates, and to this end shall hold meetings for the presentation and discussion of original contributions, shall publish transactions reporting advances within the scope of the Society and through its committees shall study and otherwise provide for the needs of its members and affiliates.

### ARTICLE II - FIELD OF INTEREST

Section 1. The fields of interest of the Society are the nuclear and plasma sciences. The Society shall devote itself to publication or other dissemination of original contributions to the theory, experiments, educational methods and applications of these fields, and to the development of standards. The process for modifying the Field of Interest shall be in accordance with the procedures in the TAB Operations Manual and the procedure defined in Article VIII of this Constitution.

Section 2. Areas of technical activity shall include but not be limited to the following:

Nuclear science and engineering, and plasma science and engineering, including computer applications in plasma and nuclear science, nuclear medical and imaging sciences, particle accelerator science and technology, pulsed power science and technology, radiation effects, and radiation instrumentation. These fields of interest include instrumentation for research; detection and measurement of radiation; nuclear biomedical applications; radiation monitoring and safety equipment; particle accelerators; magnetofluid dynamics and thermionics; plasma dynamics; gaseous electronics and arc technology; controlled thermonuclear fusion; electron, ion, and plasma sources; space plasmas; high-current relativistic electron beams and accelerators; laser-plasma interactions; diagnostics; plasma chemistry and colloidal and solid state plasmas, z pinch drivers, nuclear instrumentation development for reactor systems; effects of radiation on materials, components, and systems; and applications of radiation and nuclear energy to other than utility power generation.

### ARTICLE III - MEMBERSHIP

Section 1. Membership in the Society shall be available to all members of the IEEE having an interest in the nuclear or plasma sciences.

Section 2. Affiliates may participate in the activities of the Society as provided by the IEEE Bylaws and subject to the applicable IEEE rules and regulations and to any additional limitations imposed by the Society Bylaws.

### ARTICLE IV - FINANCES

Section 1. The Society shall collect from each member and affiliate an assessment or fee in accordance with IEEE Bylaws and applicable rules and regulations. The amount of the fees shall be established by the AdCom.

Section 2. The Society may make registration charges at its technical meetings, symposia, conferences, and conventions. The registration fee

for non-members of the IEEE shall normally be higher than for members. Section 3. The Society may raise revenues by other means such as, but not limited to, advertising, shows, requests for contributions, and charges for sending out notices to non-Society members, provided such means are consistent with applicable IEEE rules and regulations.

Section 4. The fiscal year of the society shall be the same as for the IEEE.

### ARTICLE V - ADMINISTRATION

Section 1. The Society shall be managed by an Administrative Committee (AdCom) consisting of 16 directly elected members plus certain ex officio members as specified herein and in the Bylaws. The number of directly elected members shall always exceed the number of ex officio members with voting rights.

Section 2. The terms of office of the directly elected members shall be four years. Elections of members shall be held annually to fill vacancies in the coming year. The terms of office of the ex officio members shall be specified in the Bylaws.

Section 3.

(a) The affairs of the Society shall be managed by the President, as directed by the AdCom and in accordance with the powers and duties as defined hereunder and in the Bylaws. In the event of the President's prolonged absence or incapacity, the Vice-President shall take over the presidential duties until the President is able to resume his responsibilities. In the event the Vice-President is unable, then the most recent Past-President shall perform the presidential duties, until either the President or the Vice-President is able to take the presidential duties.

(b) The President shall appoint a Secretary and Treasurer for the Society. Section 4.

(a) The President and Vice-President shall be elected for coincident two-year terms by the voting members of the AdCom from among the eligible members of the AdCom. These elections of President and Vice-President shall be held as defined in the Bylaws.

(b) All directly elected AdCom members are eligible for election as President or Vice-President. In addition, the Vice-President is eligible for election as President. No individual may be elected to two successive terms as President.

(c) In the event the Vice-President is required to complete the term of the President, the Vice-President will be eligible to run for President in the next full-term election.

(d) In the event that neither the President nor Vice-President is able to take office as prescribed in the Bylaws, or if both are incapacitated or if both offices become vacant for a period greater than 60 days, the AdCom (under the direction of the most recent Past President) shall promptly elect an Acting President from among the eligible elected members to assume the duties of President until either the President or Vice-President takes or resumes office, or until the next election.

(e) The NPSS Vice-President will, except under circumstances deemed unusual by a majority of the voting members of AdCom, become the sole nominee for the succeeding NPSS Presidential election.

Section 5. The AdCom shall utilize the services of IEEE Headquarters as bursar for Society funds as provided by the IEEE Bylaws and rules and regulations. If any part of the Society funds are received and deposited separately, the terms and conditions shall be in accordance with IEEE policies and subject to the provisions of Society Bylaws and to any special limitations that may be imposed by the AdCom.

Section 6. The President shall be an ex-officio member of all committees of the Society. As a member of the IEEE Technical Activities Board (TAB), the President shall ensure appropriate representation of the Society at IEEE and TAB meetings by personal attendance, or by ensuring that one

of the alternates defined in Section 3(a) attends. Failing this, the President should designate a representative from the ExCom, as defined in the Bylaws.

Section 7. The work of the Society shall be conducted through the AdCom and through both standing and ad hoc committees as provided herein and in the Bylaws.

Section 8. The President, as soon as expedient after election, shall appoint the Chairs of the standing Functional Committees provided in the Bylaws. Other special or ad hoc committees may be authorized and appointed by the President.

Section 9.

- (a) Standing Technical Committees may be administered by either elected or appointed committee officers as specified herein and in the Bylaws.
- (b) Each Appointive Standing Technical Committee shall be directed by a Chair who shall be appointed or reappointed annually by the President of the Society as specified in the Bylaws.
- (c) Each Elective Standing Technical Committee shall consist of at least 15 members and shall be governed according to a written Constitution and Bylaws approved by the committee and by the AdCom which shall include the following:

- (1) provision for periodic election of officers;
- (2) provision for amendment of the rules of operation subject to the approval of the AdCom; and
- (3) a statement of criteria for membership.

Section 10.

Any AdCom member who fails to perform their duties in a manner that is consistent with the best interests of the IEEE and the NPSS may be removed from office. This prerogative of AdCom should be exercised after due circumspection and only in extreme cases and always with great caution.

- (a) Appointed AdCom Members: All Presidential appointees serve at the pleasure of the President, and as such can be removed from office by the President. An appointed member of AdCom can be removed, with or without cause, by affirmative vote of two thirds of the voting members of AdCom present at the meeting, provided a quorum is present.
- (b) Elected AdCom members: A petition signed by a minimum of five voting AdCom members is necessary to instigate the removal process and the petition must include the name of the member to be removed, the position in question, and a description of the grounds for removal. Upon receipt of the petition, the Secretary will notify all AdCom members that such a petition has been received, notify the member in question, and give that member 30 days to provide a written response. After this period, the Secretary will send a ballot that includes the statement of the grounds for removal and its rebuttal to each voting AdCom member. The ballots will be returned to the Secretary who will tally the votes 30 days after the ballots were sent. Should a minimum of two-thirds (2/3) of the eligible voting AdCom members vote in favor of removal, then the member in question will be removed from office immediately. In the event that the Secretary is the member in question, the President will designate an alternate AdCom member to perform the duties assigned to the Secretary in this Section.

## **ARTICLE VI - NOMINATION AND ELECTION OF ADMINISTRATIVE COMMITTEE MEMBERS**

Section 1. Nominating procedures shall be as prescribed in the Bylaws and shall include provision for nomination by petition of Society members. Nominations by petition shall be included on the ballot and shall be so identified. To be considered as part of the slate of candidates for any position, a petition candidate must collect the original signatures of a minimum of 2% of the eligible Society members. The number of signatures required on a petition shall depend on the number of eligible society voters as listed in the official IEEE membership records at the end of the year. Signatures can be submitted by signing and mailing a paper petition or electronically through the official IEEE annual election website. The name of each member signing the petition shall be clearly printed or typed. For identification purposes of signatures on paper petitions, membership numbers or addresses as listed in the official IEEE membership records shall be included. Only signatures submitted electronically through the IEEE annual elections website or original signatures on paper petitions shall be

accepted. Facsimiles or other copies of the original signature shall not be accepted.

Section 2. Election of the members of the AdCom shall be as prescribed in the Bylaws.

Section 3. If a member of the AdCom does not complete a term, the vacancy shall be filled at the next AdCom election if more than one year remains in the term. Otherwise, the President will appoint a replacement for the remainder of the term. When an AdCom member is elected or appointed for a partial term, that person is eligible to run for the next full-term election for the same position.

## **ARTICLE VII - MEETINGS**

Section 1. The Society may hold meetings, conferences, symposia or conventions either alone, with other IEEE organizational units, or in cooperation with other organizations subject to applicable IEEE rules and regulations.

Section 2. Technical meetings, conferences, symposia, and conventions of the Society shall be open on an equal basis to all members of the IEEE. The Society may not sponsor or co-sponsor a meeting that is in any way subject to limitations on attendance by members for reasons other than availability of space.

Section 3. A majority of the voting members of AdCom or any committee thereof shall constitute a quorum. No member shall be able to cast more than one vote for any reason.

Section 4. A majority vote of the members present and entitled to vote, at the time of a vote, provided a quorum is present, shall be the act of the AdCom or any committee hereof.

Section 5. The AdCom or any committee thereof may meet and act upon the vote of its members by any means of telecommunication. The normal voting requirements, applicable at in-person meetings, shall apply when action is taken by any means of telecommunications equipment which allows the participants to simultaneously hear one another.

Section 6. The AdCom or any committee thereof may also take action by e-mail. An affirmative vote of a majority of all the voting members of the AdCom or any committee thereof shall be required to approve the action. The results of the vote shall be confirmed promptly in writing or by electronic transmission. The writings and/or electronic transmissions shall be filed with the minutes of the proceedings of the AdCom or any committee thereof. "Electronic transmission" means any form of electronic communication, such as email, not directly involving the physical transmission of paper, that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient.

Section 7. The AdCom shall meet as required to conduct business and in accordance with the Bylaws.

Section 8. Proxy voting is not allowed.

Section 9. Individuals holding more than one position on the AdCom or any committee thereof shall be limited to one vote on each matter being considered by the AdCom or committee.

## **ARTICLE VIII - AMENDMENTS**

Section 1. Amendments to the Constitution may be initiated following approval by a two-thirds (2/3) vote of the AdCom at an AdCom meeting provided that notice of the proposed amendment to the Constitution has been sent to each member of the AdCom at least three weeks prior to such meeting;. After such approval, the proposed amendment shall be publicized in the Society Newsletter, with notice that it will be submitted to the Technical Activities Board and to the Executive Committee of the IEEE for final approval unless 25 Society members object within 60 days of the date of mailing of the notice. If such objections are received, a copy of the proposed amendment shall be mailed with a ballot to all members of the Society at least 45 days before the date set for the return of the ballots; the ballots shall carry a statement of the postmark deadline for their return to the IEEE office. When a vote, as prescribed by IEEE procedures, of the entire Society membership is made necessary, approval of the amendment by at least two-thirds (2/3) of the ballots returned shall be necessary for its enactment. If approved by Society members, the proposed amendment will be submitted to the Technical Activities Board and to the

Executive Committee of the IEEE for final approval. The amendment shall take effect immediately after approval by the IEEE Technical Activities Board. If the amendment changes the membership of AdCom, the then current AdCom members will continue to serve until their term expires.

Section 2. As an alternative to the procedure outlined in Section 1 above, twenty-five members of the Society may submit a petition to the Technical Activities Board and to the IEEE Executive Committee. If approved by TAB and after notification of the AdCom, the proposed amendment shall be submitted to the membership by mail ballot as described above.

Section 3. Society Bylaws and amendments thereto may be adopted by a two-thirds (2/3) vote of the AdCom, provided that notice of the proposed Bylaw or amendment has been sent to each member of the AdCom at least three weeks prior to such meeting; or a Society Bylaw, or amendment, may be adopted by a two-thirds written vote of the eligible voting members of the AdCom, provided a two week period is provided for such responses. In either event, the proposed Bylaw or amendment shall be published in the Society Newsletter. The revision to the bylaws will take effect following Society AdCom approval, publication in the Society Newsletter and filing with the Secretary of the Technical Activities Board, which must be acknowledged.

## **ARTICLE IX - PUBLICATIONS**

Section 1. The Society shall support a program by which Transactions, Conference Proceedings, newsletters, and other forms of publication appropriate to the Society's fields of interest are published and distributed.

Publications undertaken by the Society shall be subject to IEEE policies and to further guidance and controls prescribed by the AdCom or its duly appointed committees. The Society shall be responsible for the financial aspects of its publication program.

Section 2. All publications of the Society shall have unrestricted circulation, subject only to the payment of appropriate fees. Circulation of Society publications to non-members shall be subject only to the payment of appropriate fees or charges.

Section 3. The President with the advice of the AdCom shall appoint a Publications Chair to oversee the publication program and to assure financial soundness and maintenance of schedules and format standards. The responsibilities of the Publications Chair shall include the preparation of the Society's Annual Directory. The responsibility for the technical content of any Transactions shall be controlled by that Transactions' Editor-in-Chief, who shall be nominated by the Publication Committee Chair or by the Society President and approved by the AdCom.

## **ARTICLE X - PERIODIC REVIEW**

Section 1. The President shall appoint 5 members of the AdCom every five years beginning in 2005 to evaluate the effectiveness and currency of this Constitution and Bylaws, to study the rules and governance required by the activities of the Society at that time, and to define the changes appropriate to the existing and anticipated needs of the Society. The committee will be chaired by the Vice-President, and will issue its report for action at the final AdCom meeting of that year.

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## **Bylaws**

1. Membership: There shall be two grades of Society membership: Student Members and Higher Grade Members. Student Members of the IEEE may become Student Members in the Society upon payment of the fee specified in Bylaw 3. Student members shall have all the rights and privileges of Society membership with the exception of the right to vote and to hold office. Members of the IEEE in all grades may become members of the Society upon payment of the fee specified in Bylaw 3. Life members dues are waived as provided in IEEE Bylaws.

2. Affiliates: Non-members of the IEEE who are members of certain other organizations accredited by the IEEE as provided in IEEE Rules and Regulations may become affiliates of the Society upon payment of the fees specified in Bylaw 4. The rights of Affiliate members shall be as specified by IEEE.

3. Membership Fees: The assessment or fee for membership in the Society shall be established by the AdCom. It will include the NPSS Newsletter.

4. Affiliate Fees: Affiliates shall pay the fee or assessment specified in IEEE rules and regulations.

5. Administrative Committee: Article V of the Constitution provides that the AdCom shall consist of 16 directly elected members plus certain ex-officio members. The ex-officio members of the AdCom shall be the President, Vice-President, most recent Past President, the Chairs of the Standing Technical Committees, the Chairs of Standing Functional Committees, Secretary, Treasurer, Liaison Representatives for Standards and IEEE-USA, Editors-in-Chief of the Transactions, Editor of the Newsletter, Publications Chair and other ex-officio members as provided for in the IEEE Constitution.

5.1. The voting members of the AdCom shall be the elected members, President, Vice-President, most recent Past-President, and the Chairs of the Technical Committees. The presiding officer of the AdCom meeting shall not cast a vote unless (1) the vote is by secret ballot or (2) his or her vote can change the outcome of the vote.

5.2. The AdCom shall meet at least three times per year, upon dates determined by the President and agreed to by the committee, at

least three weeks in advance of the meetings. Additional meetings may be called at the discretion of the President or upon request of at least twelve (12) voting members of the AdCom with at least three weeks notice.

5.3. AdCom meetings are open to visitors. Visitors to AdCom meeting may have the privilege of the floor at the discretion of the meeting's presiding officer. Visitors can be removed from AdCom meetings for any reason at the discretion of the meeting's presiding officer.

5.4. The final regularly scheduled meeting in the calendar year is the meeting at which written reports of all committees shall be presented.

5.5. In the absence of extenuating circumstances (as approved by AdCom), directly elected members who miss three successive meetings shall automatically be dropped from the AdCom. Representation by a designated alternate does not constitute attendance.

6. Nomination and Election of the Administrative Committee: The Nominating Committee shall be chaired by the most recent Past President and shall nominate candidates for all elected positions on the AdCom. In the event of the incapacity or conflict of interest of the Chair, the most recent Past Chair of the Nomination Committee available shall be the Chair of the Nominating Committee. With extenuating circumstances, a different individual may be appointed to this position. The Chair shall not be eligible to be elected to the AdCom during their term of service.

6.1. At least two thirds of the voting members of the Nominating Committee shall be elected or appointed from among the AdCom's voting members. Apart from the Chair, the Nominating Committee shall include all the Technical Committee Chairs. In exceptional circumstances a Technical Committee Chair may, in consultation with the relevant Technical Committee and the President, name a replacement to serve on the Nominating Committee. A member of the Nominating Committee may be nominated and run for a position for which such members respective Nomination Committee is responsible for making nominations only on the following conditions: (i) the nomination is not made by a member of the same Nominations Committee and (ii) the member resigns from the Nominations Committee prior to its first meeting of the year in which the nomination is made.

6.2. The number of vacancies for elected members to the AdCom shall

be the difference between the number authorized in Article V, Section 1, of the Constitution and the number with continuing terms. The Transnational Functional Committee will be allocated one directly elected AdCom member. The vacancies shall be divided into categories corresponding to the appropriate Standing Technical Committees with the number per category chosen to maintain representation of the entire AdCom in proportion to the NPSS membership technical interests as determined by periodic surveys. The Nominating Committee shall submit a slate of at least two names for each vacancy to be filled.

- 6.3. The Chair of the Nominating Committee shall assure that, before April 1, a call for nominations is conveyed to the whole membership either through the Newsletter or through a separate mailing. Nominations must be submitted to the Chair of the Nominating Committee on a nomination form that includes a statement of the willingness and ability of the nominee to serve if elected, the membership status of the nominee in IEEE and NPSS, a short biography and a statement of the issues that the candidate wishes to address as an AdCom member. Additional nominations for the available category vacancies may be submitted to the Society President using the same nomination form, between June 1 and July 1 upon petition signed by a minimum of 2% of the Society members in good standing or by 5 members of the AdCom. Only written signatures can be accepted on the petition.
- 6.4. The Chair of the Nominating Committee shall, with the aid of the committee members, determine the slate of nominees by July 1.
- 6.5. Current elected members of the AdCom and current Nominating Committee members are ineligible for nomination.
- 6.6. All nominees and petition candidates must be members in good standing of the Nuclear and Plasma Sciences Society and the IEEE.
- 6.7. The Chair of the Nominating Committee shall annually arrange for the distribution (through IEEE Headquarters) to the members of the Society, on or about July 31, of a ballot to elect the candidates to fill vacancies on the AdCom. The names on the ballot shall be followed by an indication of the method of nomination, whether by committee nomination or by petition. The names of the nominees shall be grouped and labeled by categories corresponding to the Standing Technical Committees. The ballot shall be accompanied by a short biographical sketch and position statement prepared by each nominee or petition candidate.
- 6.8. Sixty days after distribution of the ballots, the IEEE Headquarters shall count and tabulate the votes received and report the results to the AdCom. The candidate with the most votes shall be elected.
- 6.9. Election of the President of AdCom: An election for President will be held by written ballot before the final AdCom meeting of the even-numbered years. The ballot for election of the President will indicate two choices: 1) the current Vice-President and (2) an indication that an open election is desirable. The ballots shall be distributed by the Chair of the Nominating Committee to all voting members of AdCom for return to the Secretary of AdCom 30 days prior to the final AdCom meeting of the year. The Secretary of AdCom is responsible for counting the ballots and the Chair of the Nominating Committee will independently count the ballots and verify the tally. The Secretary of the AdCom will announce the results of the election. Should the Vice-President fail to receive a majority of the votes on the returned ballots, then AdCom will itself determine a slate of candidates for President and vote at the final AdCom meeting.
- 6.10. Nomination and Election of the Vice-President of AdCom: The Nominating Committee shall determine a slate of candidates for Vice-President according to the guidelines set forth in Article V, Section 4. In selecting candidates for the NPSS Vice-President, the Nominating Committee will ensure that those candidates shall be eligible for and will, barring unforeseen circumstances, be willing to serve for the full terms of all succeeding positions (two years as Vice-President, two years as President, and two years as the most recent Past President). The slate of candidates for Vice-President will appear on the same ballot as the election for President (specified in Bylaw 6.9) and will be subject to the same election schedule. In the event that there are more than two candidates for Vice

President, the election shall be carried out using an instant runoff voting procedure, in which each voter shall rank the candidates numerically on the ballot, beginning with the number one for the first choice, and runoff counts of the candidates shall be conducted in rounds. If, in any round, no candidate receives a majority of the votes cast, the candidate (or candidates, if there is a tie) with the fewest number of votes shall be eliminated and the remaining candidates shall advance to the next round. In each round, a voter shall be considered to have cast one vote for the candidate the voter ranked highest on the ballot who has not been eliminated in a previous round. In the event that this procedure does not produce a clear majority for any candidate, AdCom will choose the winner by a majority vote at the AdCom meeting.

- 6.11. Executive Committee (ExCom): An executive committee consisting of the President, Vice-President, Past President, Secretary, Treasurer and any other current members of AdCom, whether voting members or not, who have held the position of President, shall form the ExCom.
- 6.12. The ExCom shall advise the President on issues that the President or other members of the ExCom choose to raise between meetings of the AdCom. Business shall generally be conducted by telephone, e-mail or similar means of communication. In exceptional circumstances, the President can call a meeting of the ExCom. ExCom meetings are closed to visitors and communications of the ExCom are private.

#### 7. Standing Technical Committees: The Standing Technical Committees of the Society shall be:

The Computer Applications in Nuclear and Plasma Sciences Committee  
The Fusion Technology Committee  
The Nuclear Medical and Imaging Sciences Committee  
The Particle Accelerator Science and Technology Committee  
The Plasma Sciences and Applications Committee  
The Pulsed Power Science and Technology Committee  
The Radiation Effects Committee  
The Radiation Instrumentation Steering Committee

- 7.1. Standing Technical Committees may be of either of two forms, elective or appointive, in accordance with Article V, Section 9, of the Constitution of the Society.
- 7.2. The Chairs of Standing Technical Committees shall be members in good standing of the Nuclear and Plasma Sciences Society and the IEEE.
- 7.3. The terms of office of the Chairs of elective Standing Technical Committees shall be in accordance with the rules of each committee except that no Chair shall serve consecutively for more than three years or for two conferences when the technical committee has conferences every two years.
- 7.4. The President of the Society shall appoint the Chairs of the appointive Standing Technical Committees for a term of one year. A Chair may not serve consecutively for more than three years except in the case where a conference is held biennially and it is the wish of the appointive Standing Technical Committee that runs the conference to have their Chair serve for two of the conferences.
- 7.5. The Chairs and the Vice-Chairs of elective Standing Technical Committees shall be elected by the respective committees. The name of the Chair and the Vice-Chair so elected shall be transmitted along with a notification of the length of term of office to the Secretary of the AdCom by the outgoing Chair of each elective Technical Committee as soon as is expedient after election.
- 7.6. A Standing Technical Committee shall gain elective status by presenting a petition requesting such status signed by at least 15 members of the Committee which shall demonstrate that the requirements of Article V, Section 9 of the Constitution have been met. Approval of the elective status of a Standing Technical Committee shall be processed as an amendment to the Bylaws in accordance with Article VIII of the Constitution.
- 7.7. Standing Technical Committees may be created or changed by

amending the Bylaws in accordance with Article VIII of the Constitution.

- 7.8. The Standing Technical Committee shall take the initiative in their respective fields of interest on behalf of the Society.
- 7.9. Each of the Standing Technical Committees shall as a minimum submit a written report of its activities to the AdCom prior to the final meeting of each year. The membership and activities of the Standing Technical Committees will be publicized to the membership of the Society via the Newsletter or Transactions, and suggestions for committee membership will be invited from Society members and chapters.
- 7.10 Status and Fields of Interest of Standing Technical Committees:
  - 7.10.1. The field of interest of the Appointive Computer Applications in Nuclear and Plasma Sciences Committee shall include real-time and off-line computer systems, including hardware and software aspects of data acquisition, data analysis, data storage, and control, in any and all of the technical disciplines covered by the Society.
  - 7.10.2 The field of interest of the Appointive Fusion Technology Committee shall include the engineering aspects of controlled fusion research and fusion reactor technology.
  - 7.10.3. The field of interest of the Elective Nuclear Medical and Imaging Sciences Committee shall include radiation sources and detectors, radiation standards and monitoring, scanning and imaging systems, including image reconstruction and analysis.
  - 7.10.4. The field of interest of the Appointive Particle Accelerator Science and Technology Committee shall include the theory, design, construction and operation of nuclear particle accelerators, their beam diagnostics, and their applications in high energy particle physics, low energy nuclear physics, radiation sources and general technology.
  - 7.10.5. The field of interest of the Elective Plasma Science and Applications Committee shall include plasma science and engineering, including: magnetofluid dynamics and thermionics; plasma dynamics; gaseous electronics and arc technology; controlled thermonuclear fusion; electron, ion, and plasma sources; space plasmas; high current relativistic electron beams; laser-plasma interactions; diagnostics; plasma chemistry, plasma processing and colloidal and solid state plasmas.
  - 7.10.6. The field of interest of the Appointive Pulsed Power Science and Technology Committee shall include the understanding, development and applications of pulsed power to plasma physics, nuclear science and related fields.
  - 7.10.7. The field of interest of the Elective Radiation Effects Committee shall include the effects of radiation on materials, components and systems.
  - 7.10.8. The fields of interest of the Elective Radiation Instrumentation Steering Committee shall include sensors, electronic instrumentation, and systems for the measurement of ionizing radiation and high-energy particles with the emphasis on the tools, not the results of experiments using these tools.

8. Functional Committees: The President of the Society shall appoint the Chairs of the following Standing Functional Committees:

- Awards Committee
  - Chapters and Local Activities Committee
  - Communications Committee
  - Fellow Committee
  - Finance Committee
  - Conference Policy Committee
  - Membership Committee
  - Standards Committee
- The remaining Functional Committees have their Chairs defined elsewhere in the Constitution or Bylaws:
- Nominating Committee
  - Publications Committee
  - Transnational Committee

- 8.1. Except where otherwise specified in the Bylaws, each committee Chair shall appoint the members of the committee.
- 8.2. The terms of office of Chairs of Standing Functional Committees

shall be one year.

- 8.3. The Chairs of Standing Functional Committees shall be members in good standing of the Nuclear and Plasma Sciences Society and the IEEE.
- 8.4. Awards Committee: Solicits nominations for the various awards made by the Society, evaluates the nominees and selects those to whom the awards will be made. The Chair of the Awards Committee serves as the NPSS liaison to the TAB Awards and Recognition Committee.
- 8.5. Chapter and Local Activities Committee: Provides organization and program assistance, especially with respect to conferences, educational activities and the Speakers Bureau, to support and motivate existing Chapters. Promotes and assists in the creation of new Chapters in collaboration with the appropriate IEEE Section or Council Chairs.
- 8.6. Communications Committee: Prepares and maintains promotional material for membership recruitment and other purposes as required. The Communications Committee is responsible for the maintenance of the web site for both membership promotion and to publicize NPSS activities either directly or through links to conference, publication, and other web sites.
- 8.7. Fellow Committee: Evaluates the credentials of and ranks the IEEE Fellow Candidates referred to the NPSS for evaluation. The committee shall follow the procedures and guidelines established by the IEEE Fellows Committee.
- 8.8. Finance Committee: Monitors the financial status of the Society and reports any developing trends along with recommended actions, conducts financial studies and analyses on any Society or IEEE issues having financial implications for the Society, and reports on these matters regularly at AdCom meetings.
- 8.9. Conference Policy Committee: Responsible for recommending policies and procedures to AdCom for all conferences and symposia for which the NPSS takes full or partial responsibility and for ensuring compliance with IEEE conference policies as stated in the IEEE Meetings Organizational Manual. Note that conference officers with fiduciary responsibility, such as the Conference General Chair and Conference Treasurer, are to be members in good standing of the IEEE NPSS or of a co-sponsoring IEEE society of that conference.
- 8.10. Membership Committee: Responsible for encouraging and recruiting new Society members and Society affiliation by inviting IEEE members who have an interest in NPSS activities, by generating interest among non-IEEE members, and by making application forms available and soliciting memberships at appropriate meetings and symposia.
- 8.11. The Nominating Committee: The Nominating Committee shall be formed and administered according to the Bylaws pertaining to nominations. The Nominating Committee develops a slate of nominees for the directly elected member positions on the AdCom that become vacant each year and recommends candidates for Vice-President of the Nuclear and Plasma Sciences Society.
- 8.12. Publications Committee: Reports to AdCom on all publications activities sponsored by the NPSS. In particular, proposes an annual budget for each publication and brings to AdCom's attention any proposed new initiatives for discussion and possible approval. Also keeps AdCom apprized of IEEE publications policies and procedures and is responsible for ensuring that NPSS publications follow these policies and procedures. The Publications Committee shall be chaired by the Publications Chair, and include the Editor-in-Chief of the Transactions on Nuclear Science, the Editor-in-Chief of the Transactions on Plasma Science, the Editor of the Newsletter, and the Treasurer of the Society.
- 8.13. Standards Committee: Responsible for all activities related to standards for the technical areas associated with this Society. This includes proposing, developing, and maintaining standards for measurement techniques and tests of devices of general interest to manufacturers, developers, and users.
- 8.14. Transnational Committee: The purpose of this committee is to foster the involvement in NPSS activities of people from countries other than the United States and Canada. The directly elected member

representing the Transnational Committee is the Chair for this committee. Candidates for this position may not be from the United States or Canada.

9. Disbursements: Disbursement from Society funds shall be on the authority of the treasurer as directed by the AdCom, and in accordance with established procedures and policies of the IEEE. The President and AdCom may authorize the Treasurer to disburse funds to defray legitimate expenses incurred by the Chairs and members of the Standing Technical and Functional Committees and others in connection with required attendance at official Society, IEEE or other meetings and the costs of publications. Such expenditures must be approved by the President before being incurred.

9.1. The compensation and expense allowance of the Publications Chair and the Editors-in-Chief of the Transactions and Editor of the Newsletter shall be reviewed annually as a part of the preparation of the annual budget by the Treasurer and shall be approved by the AdCom as part of the budget approval.

10. Ballots: All ballots, for purposes of election of members of AdCom or changes in the Constitution, shall be issued to all voting members of the NPSS on instructions of the Chair of the Nominating Committee pursuant to action by the AdCom. Ballots for directly elected AdCom members will direct Society members to only vote for candidates of Standing Technical Committees of which they are members or in which they are active. No ballot shall be counted unless unambiguously marked by a qualified voter to indicate a choice, sent in a sealed envelope bearing the voters name, and received on or before the specified deadline date. This specified deadline date shall be at least sixty days subsequent to the date of mailing of the ballots. The counting of the ballots shall be entrusted to IEEE

Headquarters. The Chair of the Nominating Committee shall report the results to the AdCom.

11. Beginning of Terms of Office: All terms of office of elected members of the AdCom shall begin January 1 of the year immediately following their election, except in the case where an elected member of AdCom does not complete a term of office. In this special case, the term of office of the replacement will begin immediately after the results of the election are known.

12. Meetings: The Society may not organize or sponsor a meeting, conference, symposium, or session thereof without consulting the Chair of the Conference Policy Committee.

13. Alternates:

13.1. The Chair of a Standing Technical Committee may designate any member in good standing of the Society to represent the Standing Technical Committee at AdCom meeting. The representative shall have the privilege of the floor, but may not vote on any matters coming before AdCom.

13.2. The Constitution and Bylaws of an Elective Standing Technical Committee may include a provision that a specified Committee officer can, when needed, serve as an alternate for the Chair at AdCom meetings. This alternate has the privilege of the floor and may vote on all matters coming before AdCom.

13.3. The Transnational Committee Chair may nominate a Vice-Chair to be appointed by the President, and approved by AdCom. The Vice-Chair may serve as an alternate for the Chair at AdCom meetings. In the capacity of alternate, the Vice-Chair has the privilege of the floor and may vote on all matters coming before AdCom.



## AWARDS

IEEE offers Institute Awards and the Societies and Society Technical Committees also offer awards. While not exactly an award, elevation to the member status of Fellow is extremely prestigious and we include these individuals elevated to Fellow in our Awards section. Each year the IEEE Board of Directors elects no more than 0.1% of the full membership to the grade of Fellow. Nominations are made from among Senior Members and must be supported by at least six Fellows. After being reviewed and ranked by the appropriate IEEE Society, the nominations are forwarded to the Fellow Committee of the IEEE Board who then recommend a list of candidates for the Board's consideration. The NPSS is pleased that the following members were elected by the Board this year, and extends its congratulations to each of them.

### Richard T. Kouzes

Richard T. Kouzes is a Laboratory Fellow at the Department of Energy's (DOE's) Pacific Northwest National Laboratory (PNNL) working in the areas of computational applications, nonproliferation, and homeland security. As Chief Scientist for the Computer and Information Sciences Directorate he is responsible for creating focus and a global view of the future scientific directions of computation. His work on homeland security has been for the deployment of radioactive material interdiction equipment at U.S. borders, and for three years he was the Principal Investigator and Technical Lead for the U.S. Customs and Border Protection's Radiation Portal Monitor Project. He works on issues related to the implementation of bilateral and trilateral programs, and was Principal Investigator for the DTRA Transparency Program in the authentication of monitoring systems. He is the director of the Radiation Detection and Analysis Laboratory for PNNL as part of the Homeland Security Initiative. His other research interests are in the field of collaborative computing for the enabling of scientific research independent of geographical location, in nuclear physics for disarmament verification, and in neutrino research. He is an adjunct Professor of Physics at Washington State University.

Formerly, as the director of program development for science and engineering and professor of physics at WVU, he was responsible for facilitating the growth of research and eco-

nomonic development programs in the physical and biological sciences and engineering. Before moving to WVU, Dr. Kouzes was a staff scientist at PNNL. He was an initiator of, and a Principle Investigator for, the DOE's Collaboratory program. His research program at PNNL was in computer-assisted cooperative work, advanced data acquisition system development, neural network applications, and precision atomic mass measurements.

Before moving to PNNL, Dr. Kouzes was a senior research physicist and lecturer at Princeton University, where for 15 years he was a leading researcher in solar neutrino and nuclear structure experimentation.

Dr. Kouzes earned his Ph.D. in physics from Princeton University in 1974 and did postdoctoral work at Indiana University. He is a founder and past chair of the Institute of Electrical and Electronics Engineers (IEEE) Committee for Computer Applications in Nuclear and Plasma Sciences, and has been an elected member of the IEEE Nuclear and Plasma Sciences Society Administrative Committee. He is the author of over 300 papers.

**Citation: For contributions to nuclear radiation detection systems.**

*Dr. Kouzes can be reached at the Pacific Northwest National Laboratory, PO Box 999, MS K7-36, Richland, WA 99352; Phone: +1 509 372-4858; Fax: 509-372-4969; E-mail: Richard.kouzes@pnl.gov.*

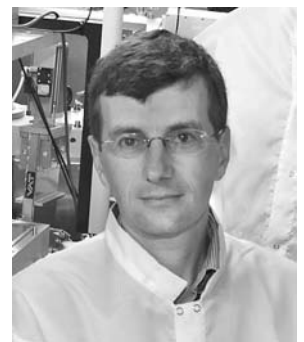


**Richard Kouzes**

### Wim P. Leemans

Wim Leemans obtained an electrical engineering/applied physics degree from the "Vrije Universiteit Brussel," Belgium in 1985, and the MS and Ph.D. degrees in electrical engineering with

emphasis on plasma physics, in 1987 and 1991 respectively, from UCLA. He received the 1092 American Physical Society Simon Ramo award for outstanding doctoral thesis research work in plasma physics. In 1991 he joined the



**Wim P. Leemans**

Lawrence Berkeley National Laboratory (LBNL), as a Staff Scientist and, in 1994, started the LOASIS group in the Accelerator and Fusion Research Division. He is also an Adjunct Professor in physics at the University of Nevada, Reno. His current research interests are in laser-based advanced accelerator concepts for electrons and ions, ultra-short X-ray pulse and THz generation and the interaction of electron beams with plasmas. He is a Fellow of the American Physical Society and the Institute of Electrical and Electronics Engineers, the current Chair of the International Committee for Future Accelerators (ICFA) Panel on Advanced

and Novel Accelerator, the corecipient of the 1996 Klaus Halbach Award for X-ray Instrumentation, the recipient of the 2005 United States Particle Accelerator School Prize for Achievement in Accelerator Physics and Technology and the corecipient of Outstanding Performance Awards in 2005 and 2006 at LBNL.

**Citation: For contributions to the field of advanced accelerators, in particular laser-plasma acceleration of electrons.**

*Wim Leemans can be reached at the Lawrence Berkeley National Laboratory, One Cyclotron Road, MS 71-259, Berkeley, CA 94720 USA; E-mail: wpleemans@lbl.gov.*

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## Warren B. Mori



**Warren B. Mori**

**W**arren B. Mori obtained his M.S. and Ph.D. from UCLA in 1984 and 1987 respectively. He is currently a full professor in both the Physics and Astronomy and Electrical Engineering departments at UCLA. He is also the Director of the UCLA Institute for Digital Research and Education. Prof. Mori holds patents on novel methods for generating tunable radiation by upshifting the frequency of light by rapid plasma creation and by the use of relativistic ionization fronts. He received the International Center for Theoretical Physics Medal for Excellence in Nonlinear Plasma Physics by a Young Researcher in 1995, in 1997 he was elected a Fellow of the American Physical Society for his “outstanding contributions to particle simulations of complex laser-plasma phenomena and of plasma based light sources,” and he was recently elected a Fellow of IEEE for his contributions to plasma science. He is currently a member of the NERSC Users Group, he is chair of the organizing committee of the 2007 Anomalous Absorption Conference, and was on the organizing committee for the 2006 SciDAC Conference. He has served on the executive committee of the Division of Plasma Physics within APS and the best thesis prize committees for both the Division of Plasma Physics and the Division of Beams. He

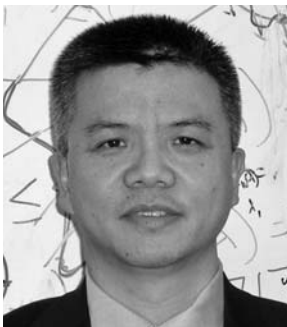
was guest editor of an IEEE Transactions on Plasma Science special issue on the Generation of Tunable Radiation Using Plasmas in February 1993. His current research interests are in high-performance computing, plasma-based accelerators, inertial confinement fusion, and high-energy-density science. He is a co-architect of the fully parallelized particle-in-cell codes OSIRIS and QuickPIC which are widely used throughout the plasma-based accelerator, inertial confinement fusion, and intense beam-plasma interactions communities. He has coauthored 220 articles including over 130 articles in refereed journals of which four were in Nature, 12 were in IEEE Transactions on Plasma Science, and 42 in Physical Review Letters. He has graduated six students of whom two have received APS sponsored best thesis prizes. Prof. Mori has also mentored 7 post-doctoral scholars and he is currently advising six graduate students. He is a referee for IEEE, Physics of Plasmas, and Physical Review. He is currently on the editorial board of the Computational Science and Discovery Journal.

**Citation: For contributions to plasma physics**

*Prof. Mori can be reached at the University of California, Los Angeles, Dept. of Physics, PO Box 951547, 4-913 PAB, Los Angeles, CA 90095 USA; Phone:*

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## Xiaochuan Pan



**Xiaochuan Pan**

**X**iaochuan Pan received his B. S. in Physics from Beijing University in 1982, his M. S. in Physics from Institute of Physics of Academia Sinica in 1985, his M. S. and Ph. D. in Physics from The University of Chicago in 1988 and in 1991. He is currently a full Professor with tenure in the Department of Radiology, the

College, the Committee on Medical Physics, and the Cancer Research Center at The University of Chicago. Dr. Pan is also a fellow of SPIE. The research interests of Dr. Pan’s laboratory center on imaging physics and mathematics, signal processing, image quality assessment, and their applications to a wide range of medical imaging prob-

lems. Dr. Pan has authored and co-authored more than 250 journal and proceeding papers on a variety of tomographic imaging approaches, including computed tomography, emission tomography, and diffraction tomography.

**Citation: For contributions to nuclear**

**and noninvasive imaging.**

*Xiaochuan Pan can be reached at The University of Chicago, Department of Radiology, MC2026 5841 S. Maryland Avenue, Chicago, IL, 60637-2026, USA; Phone: +1 773 702-1293; Fax: +1 773 702-3766; E-mail: xpan@uchicago.edu*

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## Ronald Lee Pease

Ronald L. Pease is President and sole employee of RLP Research, which he formed in 1993. His recent work has focused on radiation effects in bipolar linear microcircuits and radiation hardness assurance for his primary customer, the Defense Threat Reduction Agency (DTRA). He has been the principal investigator for the DTRA programs on enhanced low dose rate sensitivity (ELDRS) and analog single event transients (ASET) in bipolar linear circuits. After graduating with honors with a B.A. in physics from Indiana University (1965) and doing a year of graduate work in physics at the University of Washington (Seattle) he went to work for the U.S. Navy in 1966 as a civil servant at what is now NAVSEA Crane, Indiana. While at Crane he performed radiation effects testing on missile electronic components and served as the Chairman of the Space Parts Working Group Hardness Assurance Committee. In 1977 Mr. Pease left civil service and joined the BDM Corporation in Albuquerque, NM. After two years at BDM he joined Mission Research Corporation (Albuquerque) where he remained until forming his own company. At Mission Research (now ATK Mission

Research) he was the Manager of the Microelectronics Division for several years before becoming the Chief Scientist for the Division. His work at MRC included serving as the principal investigator on many Department of Defense contracts on radiation effects in microelectronics. Mr. Pease has authored over a 100 refereed journal articles and written several radiation hardness assurance guideline documents and test procedures. He has served on the NPSS Radiation Effect Steering Committee and in numerous positions on the Nuclear and Space Radiation Effects Conference (NSREC) committee, serving as the Conference Chairman for the 2000 conference in Reno, NV. Mr. Pease is a four time winner of the NSREC Outstanding Conference Paper Award and a four time winner of the Outstanding Radiation Effects Data Workshop Presentation.

**Citation: For contributions to radiation response of microelectronic devices, circuits, and systems**

*Ron Pease can be reached at 8 Songbird Lane, Los Lunas, NM 87031; Phone: +1 505 565-0548; FAX, same but call first; E-mail: rpease@rlpresearch.com*



**Ronald Lee Pease**

## Ned R. Sauthoff

Ned Sauthoff received his education at MIT and Princeton University. He developed X-ray instrumentation of tokamak plasmas and studied MHD instabilities using these new tools. He was a co-discoverer of internal MHD modes called "sawteeth." He managed design and operations of the control and data systems for the Tokamak Fusion Test Reactor. He was project manager of the PBX-M tokamak, head of the PPPL Computer Division, head of Experimental Projects, and head of the Plasma Science and Technology Department, all at Princeton

Plasma Physics Laboratory (PPPL). In 2006, he moved to the Oak Ridge National Laboratory where he is Director of the US ITER Project Office. He is a fellow of APS and AAAS as well as IEEE.

**Citation: For contributions to plasma physics and fusion energy.**

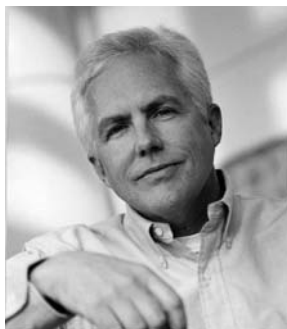
*Dr. Ned Sauthoff can be reached at Oak Ridge National Laboratory, US ITER Project Office, PO Box 2008, Bldg 1055COM, MS-6483, Oak Ridge, TN 37831-6483; Phone: +1 865 574-5955; Fax: +1 865 574-6018; E-mail: nrsauthoff@ornl.gov.*



**Ned R. Sauthoff**

## SOCIETY AWARDS MERIT AWARD

Charles L. Melcher



**Charles L. Melcher**  
*Merit Award*

The 2006 NPSS Merit Award was given to Chuck Melcher. Following a background in luminescence physics and materials science as a graduate student at Washington University and as a post-doc at Caltech, Chuck began to focus on scintillation materials while at Schlumberger-Doll Research. As Program Leader of Advanced Detectors, he led a group that conducted fundamental investigations of various scintillation materials for potential use as gamma-ray detectors in geophysical exploration. These investigations led to the development of compact gamma-ray detectors for down-hole water saturation measurements in producing oil wells, a technique that continues to be a commercial standard in the industry.

While at Schlumberger, Chuck invented a new scintillator material known as LSO (cerium-doped lutetium oxyorthosilicate,  $\text{Lu}_2\text{SiO}_5:\text{Ce}$ ) which has outstanding properties for gamma ray detection. Its combination of high density and atomic number, high light output, and short decay time gave it significant advantages over previously known scintillators. LSO was quickly recognized as having particularly valuable properties for use in Positron Emission Tomography (PET), a molecular imaging technique for the early detection of diseases such as cancer and Alzheimer's. His first presentation about LSO earned an award at the NSS-MIC conference in Santa Fe, and the corresponding paper is one the most cited scintillator articles in the Transactions on Nuclear Science.

In 1996 Chuck moved to CTI, Inc. to form a team that would continue to develop LSO for commercial PET applications. This team collaborated with numerous researchers world wide to further investigate fundamental properties of LSO while also developing prototype growth systems to demonstrate large scale production feasibility. The successful development of a commercial scale growth process enabled the team to design and construct of one of the largest crystal manufacturing factories in the world whose output now provides LSO crystals for hundreds of Positron Emission Tomography systems annually. The factory also produces large crystals for potential use in particle physics experiments.

When CTI merged with Siemens Medical Solutions in 2005, Chuck organized a partnership between the University of Tennessee and Siemens to form the Scintillation Materials Research Center (SMRC). He joined the faculty of the Materials Science and Engineering Department at the University of Tennessee and became Director of the Center. The SMRC is a groundbreaking example of a cooperative partnership between industry and academia, providing unique research opportunities for engineering students and an integrated approach for the commercial realization of innovations in scintillation materials.

LSO has become the standard against which new scintillator materials are often compared. During the 15 years since its introduction, no scintillator has yet equaled its combination of high light yield, fast decay time, high density and atomic number, and environmental stability. Chuck not only discovered and patented LSO and carried out much of the initial basic research on its properties, but he also led its development to the industrial production level and its widespread implementation in positron emission tomography (PET). It is arguably the most commercially successful scintillator of the last 20 years, now used in nearly half of the clinical PET scanners currently manufactured as well as in the vast majority of small animal PET scanners. The discovery and commercialization of LSO is often mentioned as one of the major developments in nuclear medical imaging of the last few decades. In addition, it is now under consideration for the next generation of high energy physics calorimeters.

Chuck has been an active member of the IEEE and the NPSS for many years. In addition to numerous program committees, he has served on the Radiation Instrumentation Steering Committee and the Constitution and Bylaws Committee. He currently serves as Vice Chair and Chair-elect of the Radiation Instrumentation Technical Committee. In addition, he serves as Associate Editor of the Transactions on Nuclear Science.

**Citation: For outstanding contributions to the field of scintillation materials, particularly for the invention, development, and**

### High and dry

And Noah he often said to his wife as he sat down to dine, I don't care where the water goes if it doesn't get into the wine.

G. K. Chesterton

commercialization of LSO scintillators and the resulting impact on positron emission tomography and nuclear medicine.

*Chuck Melcher can be reached at*

*Scintillation Materials Research Center,  
University of Tennessee, Knoxville, TN 37996-  
2000; Phone: +1 865 974-0254; Fax: +1 865  
974-4998; E-mail: cmelcher@utk.edu.*

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## RICHARD F. SHEA DISTINGUISHED MEMBER AWARD

**Paul V. Dressendorfer**

**P**aul V. Dressendorfer received the B.S. degree in Physics from the California Institute of Technology in 1972, and the M.S., M.Phil., and Ph.D. degrees in Solid State Physics from Yale University in 1973, 1974, and 1978, respectively. He recently retired from Sandia National Laboratories as the manager of the Biomolecular Interfaces and Systems Department at Sandia National Laboratories. This group focused on the science of integration of biomolecular processes, biological principles, biomimetic materials, and biomolecular function into nano- and microscale systems. His earlier research activities and publications have covered a wide range of areas including semiconductor device physics, basic radiation damage mechanisms, characterization of radiation effects, hardened technology development, hardness assurance, optoelectronic devices, multichip modules, advanced electronic and microsystem packaging, thermal management, frequency devices, sensors and transducers, and microsystem electronics. He has been active in a variety of IEEE activities, including positions such as general chair of the Nuclear and Space Radiation Effects Conference (NSREC) and of

the Semiconductor Interface Specialists Conference (SISC), short course instructor and chair of the NSREC, technical program chair of the SISC, IEEE Section Membership chair, IEEE Standards Committee member, and member of the NPSS AdCom, Radiation Effects Steering Group, and Radiation Instrumentation Steering Committee. He is a Fellow of the IEEE and a recipient of the IEEE Third Millennium Award. He has been the Editor-in-Chief of the IEEE Transactions on Nuclear Science since 1993, is currently the Editor-in-Chief (Chair of the Publications Committee) of the NPSS, and is the NPSS Liaison to the TAB Transactions Committee. He recently reorganized the Editorial Board and review processes for the Transactions on Nuclear Science; a similar structure is also being implemented in the Transactions on Plasma Science.

**Citation: In appreciation of 14 years as editor for NPSS. Special recognition as Editor-in-Chief for reorganizing and implementing an effective operating structure for the Transactions on Nuclear Science.**

*Paul Dressendorfer can be reached at p.dressendorfer@ieee.org.*



**Paul V.  
Dressendorfer**  
*Richard F. Shea  
Distinguished  
Member Award*

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## EARLY ACHIEVEMENT AWARD

**JOHN W. LUGINSLAND**

**J**ohn Luginsland received the B.S.E., M.S.E., and Ph.D. degrees from Department of Nuclear Engineering at the University of Michigan in Ann Arbor, Michigan. His doctoral research involved the theoretical and computational analysis of two-beam accelerators, field emission physics, and coherent microwave generation. In 1996, he joined the Air Force Research Laboratory at Kirtland AFB, NM – first as a National Research Council Resident Postdoctoral

Research Associate, and later as a staff member in the Center for Plasma Theory and Computation. In 2001, he moved to Science Applications International Corporation as a senior scientist and program manager. In 2003, he joined NumerEx of Albuquerque, NM, at a satellite office in Ithaca, NY.

At AFRL, Dr. Luginsland performed research advancing the state-of-the-art in both high power microwave (HPM) sources and high performance computational models of



**John W. Luginsland**  
*Early Achievement  
Award*

## Power play

Those who play political chess should not forget that a pawn can secure a checkmate.

*Robert Rhodes  
James*

electromagnetic devices. He led a team in basic research of multi-dimensional space-charge limited flows that led to mitigation of pulse shortening in the magnetically insulated line oscillator. He also participated in the development of ICEPIC, a massively parallel electromagnetic particle-in-cell code, with application to HPM sources. He and his colleagues were honored with the Air Force's Advanced Technology Development Award during this time.

At SAIC, Dr. Luginsland developed parametric design tools for advanced armor and survivability systems, which remain in use today. He was a program manager and test planner in integrating these systems into next generation platforms.

At NumerEx, Dr. Luginsland has applied computational plasma physics to closely support experimental technology development at various phases of maturity, in compact HPM sources, emission physics and cathode designs, MHD effects in high power fuses for

survivability systems, electrically enhanced combustion, and quantum vacuum nanoelectronics. His wider interests include the coupling of parametric and first-principles physics software, high-performance computing and optimization algorithms, and application of virtual prototyping to speed development and deployment of electromagnetic high technology systems.

The award will be presented at the Pulsed Power Plasma Science conference in Albuquerque, NM in June 2006.

**Citation: For contributions to the development and application of theoretical and computational methods leading to enhanced understanding and improved experimental performance of high current diodes and high power microwave sources.**

*John W. Luginsland has been a member of the IEEE and NPSS since 1994, and can be reached at NumerEx, 401 E. State St., Suite 304, Ithaca, NY 14850; Phone: +1 607 277-4272; Fax: +1 607 697-0212; E-mail: John.Luginsland@NumerEx.com*

## GRADUATE STUDENT ACHIEVEMENT AWARDS

### Xin Dai



**Xin Dai**

Xin Dai was born in Hubei China in 1976. He received his B.E. degree in 1996 and M.S. degree in 1999, both in Electrical Engineering from Huazhong University of Science and Technology, Wuhan, China, and the Ph.D. degree from the University of Tennessee, Knoxville, TN, in 2006. He is currently a Postdoctoral affiliate

at Plasma Science Laboratory at the University of Tennessee at Knoxville. His research interests include industrial plasma research and application, especially at atmospheric pressure, pulsed power and high power electronics.

Dr. Xin Dai is a member of IEEE, AIAA and APS.

### Carrie B. Hruska



**Carrie Hruska**

Carrie Hruska has been named a recipient of the IEEE NPSS Graduate Scholarship Award given to recognize contributions to the fields of Nuclear and Plasma Sciences. Hruska is a graduate student at Mayo Clinic College of Medicine in Rochester, MN and will graduate with a Ph.D. in Biomedical Engineering in May 2007. She received her undergraduate degree in electrical engineering from South Dakota State University in 2002.

Hruska's doctoral thesis research is focused on the use of small pixilated detectors for a nuclear medicine technique to image breast cancer, called Molecular Breast Imaging (MBI). She is current-

ly working with a prototype CZT detector, and the goal of her work is to advance MBI by examining the patient-related factors that limit tumor detection, optimizing the technical parameters of the imaging system, and developing a method to localize tumors in the breast. The central hypothesis is that recent advances in small detector technology combined with new radiopharmaceuticals will permit the development of an MBI system that will provide reliable detection and localization of small breast tumors (< 10 mm). MBI is currently under evaluation at Mayo as a screening technique for women with dense breast tissue who are at increased risk for breast cancer.

## Randolph McKinley

Randolph McKinley recently received his Ph.D. in Biomedical Engineering from Duke University in Sept. 2006. He currently works in the Multi-Modality Imaging Lab (MMIL) at Duke concentrating on X-ray computed mamotomography, a dedicated 3D breast imaging technique, which includes a practicable quasi-monochromatic

cone beam X-ray source that can move about an object 3-dimensionally collecting transmission data. In addition, he holds a Master of Science in Electrical Engineering from Columbia University and Bachelor of Science degrees in both Biology and Electrical Engineering from University of New Brunswick.



**Randolph McKinley**

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## Xing Zhou

Xing Zhou is in the process of completing her PhD research in the interdisciplinary graduate program in materials science at Vanderbilt University. She has made significant contributions to the understanding of the separate and combined effects of bias-temperature stress and ionizing radiation exposure for MOS devices with high-K dielectric materials. Xing has authored 11 publications, and was first author on four of them. A paper on which Xing was first author,

“Bias-temperature instabilities and radiation effects in MOS devices,” was one of 11 papers nominated for the Outstanding Conference Paper Award at the 2005 IEEE Nuclear and Space Radiation Effects Conference (IEEE NSREC) in Seattle, WA. She also received a Paul Phelps Continuing Education Grant for the 2006 IEEE NSREC in Ponte Vedra Beach, FL.

*Xing Zhou can be reached by e-mail at: [xing.zhou@vanderbilt.edu](mailto:xing.zhou@vanderbilt.edu)*



**Xing Zhou**

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## Technical Committee Awards 2006 Edward J. Hoffman Medical Imaging Scientist Award

Ronald Jaszczak, Professor of Radiology and Biomedical Engineering at Duke University received the 2006 Edward J. Hoffman Medical Imaging Scientist Award for his important and sustained lifetime contributions to nuclear and medical imaging sciences, particularly single-photon emission computed tomography. Dr. Jaszczak also received the 2000 Paul C. Aebersold Award from the Society of Nuclear Medicine for his outstanding contributions in basic science applied to Nuclear Medicine, and, in 2004, he received the Outstanding Alumni Award from the Physics Department of the School of Liberal Arts and Sciences at the University of Florida.

Ronald Jaszczak received the Bachelor of Science degree in Physics from the University of Florida. In 1968, he received the Doctor of Philosophy degree in Physics from the University of Florida. During his career he has worked in academia, private industry, and with the federal government. He was awarded a U.S. Atomic Energy Commission (AEC)

Postdoctoral Fellowship at Oak Ridge National Laboratory in 1968. He was recruited to Duke University Medical Center in 1979 as an Associate Professor in the Department of Radiology. In 1989, he was promoted to Professor of Radiology. He was promoted to Professor of Biomedical Engineering in 1992.

Professor Jaszczak is a Fellow in the Institute of Electrical and Electronics Engineers (IEEE) and has served the IEEE Nuclear and Plasma Sciences Society (NPSS) in many administrative capacities, including President (1997-98). He has authored or co-authored over 300 peer-reviewed journal articles, conference proceedings, book chapters and patents. His research interests are in the field of medical imaging science. Dr. Jaszczak has made major contributions to nuclear medicine, in particular to the development, characterization and understanding of single photon emission computed tomography (SPECT); he is credited with coining the term SPECT, which is widely used in referring to this imaging modality. He



**Ronald Jaszczak**

Happens rarely too

A statesman is a politician with whom one happens to agree.

Lloyd George

designed and built early prototype SPECT imaging systems. His current research interests at Duke are directed toward investigating new approaches for improving quantitative SPECT imaging and toward the application of these improvements to specific clinical imaging tasks. In 1981, he and his wife, Nancy, co-founded Data Spectrum Corporation (DSC) in

Hillsborough, NC, a leading manufacturer of quality assurance and research phantoms for the nuclear medical imaging community.

Ron Jaszczak can be reached at Duke University Medical Center, Department of Radiology/Nuclear Medicine, Durham, NC 27710-0001 USA; Phone +1 919 684 7685; Fax: +1 919 684 7122; E-mail: rjj@dec3.duhs.duke.edu

## AWARD SOLICITATIONS

### Radiation Effects Award

Nominations are currently being accepted for the 2007 IEEE Nuclear and Plasma Sciences Society (NPSS) Radiation Effects Award. The purpose of the award is to recognize individuals who have had a sustained history of outstanding and innovative technical and/or leadership contributions to the radiation effects community. The \$2000 cash award and plaque will be presented at the IEEE NSREC in Honolulu, Hawaii, July 23-

27, 2007. Nomination forms are available electronically at <http://www.nsrec.com/nominate.htm>. Nominations must be submitted by March 16, 2007.

Additional information can be obtained from Veronique Ferlet-Cavrois, Senior Member-at-Large for the Radiation Effects Steering Group. Dr. Ferlet-Cavrois can be reached at 33 1 6926 4265 or at [veronique.ferlet@cea.fr](mailto:veronique.ferlet@cea.fr).

### Paul Phelps Student Award

University professors may nominate a graduate student for the prestigious Paul Phelps Continuing Education Grant for exceptional graduate students in the NPSS fields. Nominees must be a member of NPSS. The award is for \$500 to attend the 2007

NSREC Short Course in Honolulu, Hawaii, in July 2007. Submission deadline is May 15, 2007. Forms can be obtained at [www.nsrec.com/steeringcommittee](http://www.nsrec.com/steeringcommittee) and be sent to Member-at-Large, Wayne Abare, at [wabare@harris.com](mailto:wabare@harris.com). Wayne can be contacted at 321-729-7224.

## ARTICLES

### Reaching for Higher Luminosity

Michael Sullivan

Stanford Linear Accelerator Center



Michael Sullivan

The success of the B-Factories in finding CP violation in the B-meson system with the value expected from the Standard Model has led to a search in rare B meson decays for a process that might hint at physics beyond the Standard Model. The signal could be either an observed decay process that should not happen or the absence of a decay process that should happen or a decay rate for a certain process that does not match prediction. This kind of search needs as much integrated luminosity as the accelerator can

deliver in a reasonable amount of time (years). High luminosity is one of the two directions for discovery (the other being higher energy) and with this in mind the PEP-II accelerator at SLAC has been pushing for higher luminosity records in both peak and integrated values. Last summer, PEP-II attained a peak luminosity of just over  $1.2 \times 10^{34} \text{ cm}^{-2}\text{s}^{-1}$  four times higher than design and a 24-hr integrated luminosity record of  $911 \text{ pb}^{-1}$  nearly 7 times the design value of  $135 \text{ pb}^{-1}$ .

The PEP-II accelerator at SLAC is a 2.2 km



circumference double storage ring that collides a 9 GeV electron beam with a 3.1 GeV positron beam in a head-on collision at the center of the BaBar detector. PEP-II has achieved beam currents of 1.9 A for the high-energy beam (HEB) and just under 3.0 A for the low-energy beam (LEB) in 1722 beam bunches. The positron beam current is a world record for an anti-matter beam. The beam currents are maintained by continuously injecting beam into the storage rings. The typical injection rate for the low-energy ring (LER) is about 5 Hz while the rate for the high-energy ring (HER) is about 2 Hz. The BaBar collaboration has developed a technique whereby they blank out data coming from the beam bunches that most recently received an injected pulse until the injected particles have a chance to damp down. This minimizes the data loss to the detector while keeping backgrounds in the detector to a minimum. Figure 1 shows the monthly integrated luminosity totals for PEP-II since initial turn-on in 1999 and Figure 2 displays the integrated total. Figure 3 shows the peak luminosity achieved for each month of running.

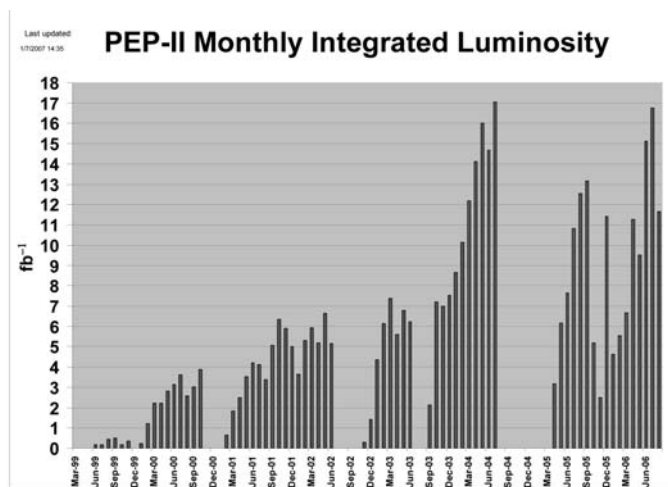


Figure 1. The monthly integrated luminosity delivered to the BaBar detector.

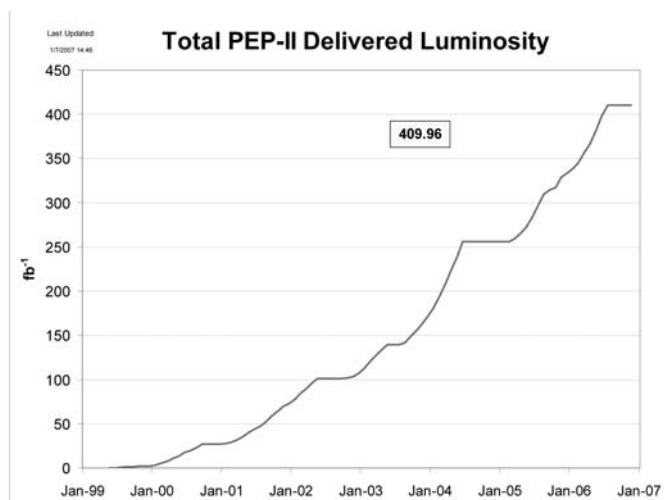


Figure 2. The total integrated luminosity delivered to the BaBar detector.

### HIGH-CURRENT RUNNING

Running high current beams tends to reveal any weaknesses in several subsystems, in particular the vacuum chamber design, the RF system and the fast feedback systems. The vacuum system is tested by synchrotron radiation (SR) that is generated by the beams as well as by higher-order-mode power (HOM) left behind by the passing beam. The power from these sources has to be absorbed and controlled without causing damage to local components. The beams share a common beam pipe around the interaction point (IP) for about 5 m. It is not too surprising that this region is one of the places in the accelerator where a large amount of HOM power is generated. The total beam current through the shared pipe is nearly 5 A. In addition, two 0.5 m long strong bending magnets close to the IP bring the beams into and out of collision and these two magnets

together are one of the largest source of local SR power in the entire ring. They generate a total of 120 kW when we have stored the beam currents mentioned above.

The run in 2006 uncovered several issues from HOM power that we addressed either during the run or during this last summer shutdown. We list some of these issues here.

1. A design flaw on an RF seal for the vacuum joint on a bellows section at the end of the shared beam pipe in the BaBar detector that produced arcing.
2. RF seal failure probably due to more vacuum chamber motion than the seal could accommodate in several areas of the HER.
3. Beam position monitor buttons that were press fit onto the vacuum feed-through pin that fell off due to overheating from too much HOM power absorption.

### Speedy progress

America: a nation that has gone “directly from barbarism to degeneration without the usual interval of civilization.

Georges Clemenceau

### Still waiting

One waits in vain for psychologists to declare the limits of their knowledge.

Noam Chomsky

## Scientific objectivity?

It is remarkable how often the first interpretation of new evidence have confirmed the preoccupations of its discoverer.

John Reader

## Blind date

To find a friend, one must close one eye. To keep him - two.

Norman Douglas

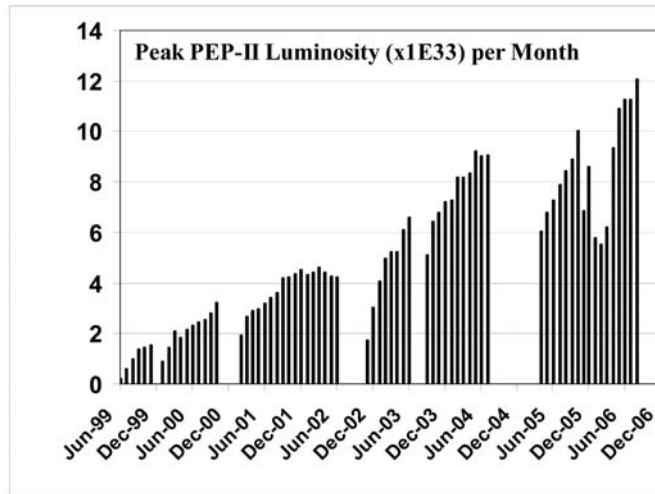


Figure 3. Plot of the peak luminosity achieved each month.

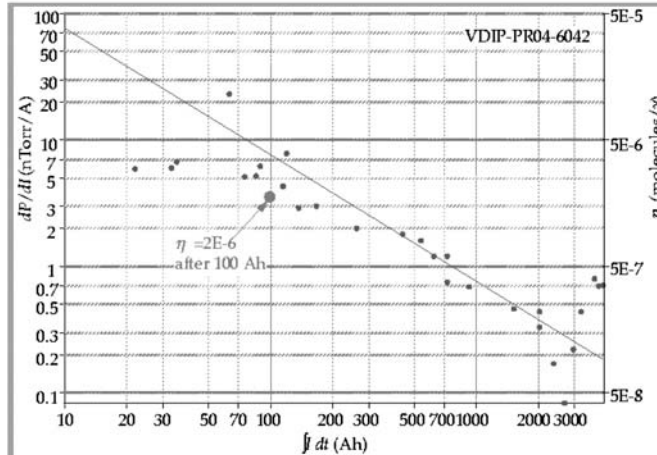


Figure 4. The data in this plot was collected a couple of years ago when we had integrated only about 5000 A-h in the HER. As you can see the photon desorption coefficient continues to decrease. The large green dot is the number we used when PEP-II was designed. At that time no accelerator had stored more than 100 A-h of beam current.

We replaced the RF seal that had the design flaw with one having an improved design. We have replaced the seals that appear to have failed due to too much vacuum chamber motion and we have replaced all of the boms in 5 out of 6 arcs of the LER with a new improved design.

The RF system, which controls the klystron output power and accounts for the loading of the cavities from the beam through a series of overlapping feedback loops must be kept in good, reliable running condition in order to correctly control the RF from very low currents, while we fill the beams from the accelerator, up to full current. The LER system has to deliver 2.3 MW of precisely controlled power to the LEB and the HER system has to deliver 6.4 MW to the HEB.

PEP-II has accumulated a total of 31,000 A-hrs in the HER and 48,000 A-hrs in the LER. This is more stored beam current than any other accelerator has achieved. We have found that the photon desorption coefficient (the number of gas molecules that come out of the beam pipe wall per photon that strikes the wall) continuously decreases at the beam amp-hours increase. See Figure 4. This means that the overall vacuum pressure gradually improves over time and that the recovery time from having to vent a section of the vacuum chamber is relatively quick.

## PLANS FOR FUTURE RUNNING

During this last shutdown, we installed another RF station (1 klystron and 2 new cavities) in the HER and also split up a 4 cavity RF station into 2 two-cavity stations by adding another klystron. This will let us attain a higher HER beam current of 2.2 A. We are also working on decreasing the beam spot size at the IP by lowering the emittance of the HER using a new lattice.

We have added several new vacuum components to the beam pipe on either side 9+/- 60 m) of the BaBar detector. These new elements are designed to shield the stored beam from HOM absorbing tiles and yet allow the very high frequency HOM power to get through the shield and be absorbed. Figure 5 shows a photograph of one of these components.

The present run in 2007 is scheduled to go until sometime this fall when we will shut down for 3 months. Then we will start up again in 2008 and run until October when we will cease running the B-factory at SLAC. By that time we plan to have delivered a total of almost 1000 fb<sup>-1</sup> to the BaBar detector. We hope to have nearly doubled the peak luminosity from the present 1.2x10<sup>34</sup> cm<sup>-2</sup>s<sup>-1</sup> to 2.1x10<sup>34</sup> cm<sup>-2</sup>s<sup>-1</sup>. In addition, encouraged by the discoveries of this last run, we hope to greatly improve the reliability of the accelerator and thereby improve our uptime, leading to greater integrated luminosity records for a

given peak luminosity. The ultimate LER beam current we plan to achieve is 4.0 A.

### SUMMARY

PEP-II has achieved a peak luminosity of  $1.2 \times 10^{34} \text{cm}^{-2} \text{sec}^{-1}$ , 4 times higher than the design luminosity. The record 24 hr luminosity is  $911 \text{pb}^{-1}$  almost 7 times higher than the design value of  $135 \text{pb}^{-1}$ . In the coming 2 years the PEP-II team plans to nearly double the peak luminosity yet again to  $2.1 \times 10^{34} \text{cm}^{-2} \text{sec}^{-1}$  and to deliver nearly  $600 \text{fb}^{-1}$  to the BaBar detector, more than doubling the present data set.



Figure 5. Picture of the RF shield for the upgraded bellows section at one end of the BaBar detector. Note the large gaps between the fingers. The HOM absorbing tiles can be seen behind the shield fingers.

## OTHER

### *IEEE Transactions on Medical Imaging* APPLICANTS SOUGHT FOR EDITOR-IN-CHIEF

The Steering Committee of the *IEEE Transactions on Medical Imaging* (TMI) is seeking applicants for the Editor-in-Chief (EIC) of TMI starting January 2009. The new EIC will be selected in the fall of 2007, overlap with the current EIC in 2008 to permit a smooth transition, and take office in 2009.

#### SCOPE OF IEEE TMI

The *IEEE Transactions on Medical Imaging* is an archival journal published monthly. The journal publishes original contributions on medical imaging achieved by various modalities, such as ultrasound, X-rays (including CT), nuclear magnetic resonance, radionuclides, and light, as well as medical image data acquisition and retrieval, processing and analysis, and pattern recognition and related methods. The journal focuses on a unified common ground where instrumentation, systems, components, hardware and software, mathematics, and physics contribute to the studies.

#### QUALIFICATIONS AND REQUIREMENTS OF CANDIDATES

Applicants should have a broad and recognized expertise in the medical imaging community, have a scientific vision to expand one of the leading journals in the field, possess editorial experience, be able to lead an active editorial board and to work effectively with technical and publishing professionals, and be a member of the IEEE. Applicants must have

employer support for this activity.

Major responsibilities of the future EIC of TMI include:

- Identification and appointment of respected experts to his/her editorial board;
- Solicitation of special issue proposals and manuscripts in specific areas;
- Identification of emerging imaging modalities, devices, or analysis methods and active solicitation of high quality manuscripts in these areas;
- Timely management of a large number of submissions and resolution of conflicts or problems, as necessary.

#### SEARCH PROCEDURE

Prospective candidates are asked to provide a condensed CV in summary form and a statement describing the candidate's vision for the future of TMI by June 1, 2007. Following initial screening by the committee, a complete CV will be requested. Nominations will also be accepted until May 1.

Applications and nominations should be sent to the Chair of the Steering Committee:

Professor Benoit M. Dawant  
Box 1662-Station B  
Vanderbilt University  
Nashville, TN 37235  
Tel: 615-322-7923  
Fax: 615-343-6702  
e-mail: Benoit.Dawant@Vanderbilt.edu

## Even truer today

We have long since lost the true names of things. It is precisely because squandering the goods of others is called generosity, and recklessness in wrong-doing is called courage, that the republic is reduced to extremities.

*Cato the Younger*

## 2007 Nuclear and Plasma Sciences Society

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