NPSS NEWS

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2013 60th Nuclear Science Symposium, Medical Imaging Conference, and 20th Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors

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General Chair's Message

We look forward to welcoming you to the 2013 60th IEEE Nuclear Science Symposium and Medical Imaging Conference, and 20th International Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors workshop (NSS/MIC/RTSD). The 2013 Conference will be held for the first time in the Asia-Pacific region, in the beautiful and historical city of Seoul, Korea, from October 27th to November 2nd, 2013 at the spacious and modern COEX convention center. The conference center is located in the south part of the city, with easy access to the airport, and within walking distance of a variety of other hotels in many categories. It is conveniently linked to the city center, the historical museums and the ancient palaces by foot or by public transport. The hotels are a short walk from a collection of restaurants, shops, movie theaters, and other options in the downtown city area.

Our theme for 2013 is "Beyond Imagination of Future Science" and the Organizing Committee is planning a meeting of high scientific calibre that will include both oral and poster presentations and refresher courses on important topics. A commercial exhibition that will showcase state-of-the-art products and services from a wide range of companies will be held in parallel to the scientific sessions. The exhibit space will be specifically set up to allow both the exhibitors and attendees ample space for discussions and exploration of common interests. In addition to the presentation of original work, the conference also provides extensive educational opportunities via short courses and special emphasis seminars before and during the conference. Popular refresher courses will be held during the week to review current topics of special interest.

On behalf of the 2013 Organizing Committee and the IEEE Nuclear and Plasma Sciences Society, we strongly encourage you to plan to attend the first-ever IEEE NSS/MIC/RTSD to be held in Seoul, Korea.

As in past years, the conference team will be making special efforts to obtain support grants for students to attend this important meeting so that they may take full advantage of this unique scientific and educational opportunity. This meeting has always been a great opportunity to get together with old friends and to make new ones, to exchange ideas and share knowledge and experience in the nuclear science, medical imaging, and room-temperature semiconductor X-Ray and Gamma-Ray detector fields. This meeting expects to bring more people from Asia-Pacific areas to make the 2013 conference very special and meaningful so that the IEEE NSS/MIC/RTSD gets full recognition in Region 10. All conference attendees will have access to free wireless internet throughout the conference center and the adjacent hotels. A computer room at the COEX will provide internet-connected laptops and printers. The program will allow time for attendees to interact and discuss their work, new ideas and emerging technologies with friends and colleagues.

The success of the 2013 NSS/MIC/RTSD Conference would not be possible without the tremendous effort of the Organizing Committee

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2013 NSS/MIC/RTSD

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Steve Meikle
Deputy General Chair

Hee-Joung Kim
General Chair

Kisung Lee
Treasurer

Yong Hyun Chung
Conference Organizing Chair

Seungryong Cho
Publicity/Press Chair

Tom Lewellen
Treasurer

(OC) and all the other volunteers including the Advisory Committee and PCO associated with the conference. The organization of an IEEE meeting in Korea, the first in the Asia-Pacific area, presents some unique challenges, and the committee has done a superb job in resolving issues smoothly so as to make the conference a scientific, social, and financial success.

As General Chair, it has been a great pleasure working with such an outstanding team. I thank them sincerely for the enriching experience. It has been especially rewarding to work with my friends and colleagues from Korea as well as to organize several on-site meetings with foreign OC members who willingly travelled several times to the beautiful city of Seoul.

This conference and the ability of the volunteers to work on it, is made possible through the sponsorship of the IEEE Nuclear and Plasma Sciences Society (NPSS) as well as through the generous support of the cooperating institutions and organizations. I am indeed fortunate to have such a hard-working and skilled committee—the key to the success of such a complex conference. All of the committee members have shown their dedication to the conference, their willingness to compromise where needed, and their ability to work together—even over long distances.

The support from the Korean government, institutions and industries has been especially encouraging. Following the submission of a record number of abstracts in all categories, although this is the first NSS/MIC/RTSD in the Asia-Pacific area, the Scientific Program Chairs performed an outstanding and timely job in assembling the contributed papers so as to maximize the benefit to the attendees despite such a difficult time with political as well as economic issues. I sincerely thank all the Program Chairs for their efforts. Of course, there would not be a conference without the outstanding contributions from all of the authors and attendees. I wish to thank you for continuing to ensure that the IEEE NSS/MIC/RTSD maintains its reputation for its outstanding intellectual and scientific content.

The City of Seoul not only provides an excellent venue for our professional meeting, but also is an ideal location for attendees to bring their families. A variety of interesting tours will be offered so attendees and their companions can experience Seoul and the surrounding region to the full. City Tours are the most convenient and comfortable way to explore a city where the major sights and attractions are presented on a single tour. The Korean capital, Seoul, a city of old and new, is nestled around the Han River. With thousands of years of history, it has well-preserved royal palaces, historical relics, and cultural treasures, as well as state-of-the-art facilities and infrastructure.

We are very confident that the meeting in Seoul will be very successful and remembered for celebrating the 60th Anniversary of NSS, as well as the 20th Anniversary of RTSD, as we continue to travel "Beyond Imagination of Future Science."

On behalf of the 2013 Organizing Committee and the IEEE Nuclear and Plasma Sciences Society, we strongly encourage you to plan to attend the first-ever IEEE NSS/MIC/RTSD to be held in Seoul, Korea.

We very much look forward to welcoming you to Seoul in October 2013!

— Hee-Joung Kim , General Chair

SCIENTIFIC PROGRAM

For complete details on all topics and program sessions, please visit the conference website at nss-mic.org/2013. We have accepted over 1,700 outstanding papers that will be presented in either oral or poster format. Brief descriptions of individual programs follow.

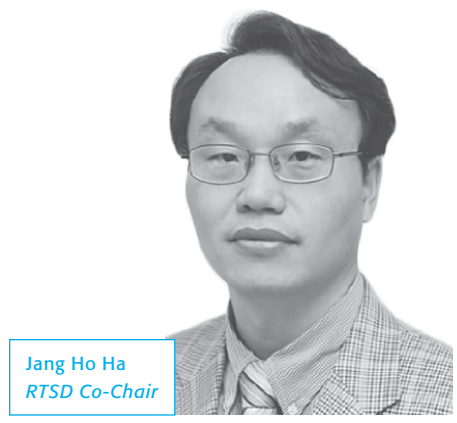
20th Workshop on RTSD X-Ray and Gamma-Ray Detectors

The 20th International Workshop on Room-Temperature Semiconductor Detectors (RTSD) represents the largest forum of scientists and engineers developing new semiconductor radiation detectors and imaging arrays.

Ralph B. James
RTSD Co-Chair

RTSD for X-ray, gamma ray, and neutron radiation are increasingly finding applications in diverse fields, such as medicine, homeland security, astrophysics and environmental remediation. The objective of this workshop is to provide a forum for discussion of the state of the art in the development of semiconductor materials and photoconductive materials for radiation detection, material and detector characterization, device fabrication processes, electronics and applications. Oral and poster presentations representing a broad spectrum of research activities emphasizing either device or material understanding are programmed including the following fields:

- Semiconductor Materials for Radiation Detection
- Organic and other Photoconductive Materials for Radiation Detection
- Crystal Growth, Materials and Defects Characterization
- Strip, Pixel and Discrete Semiconductor Detectors
- 3D Photon Tracking Detectors and Image Reconstruction Technology
- Properties of Electrical Contacts and Device Fabrication Technology
- Radiation Damage, Long-Term Stability and Environmental Effects
- Scintillator/Semiconductor Array Hybrids
- Solid-state Neutron Detectors
- Detector/ASIC Hybridization, Interconnects and Electronics



Jang Ho Ha
RTSD Co-Chair

- Spectrometer Systems for Homeland Security, Nuclear Inspections Safeguards and Portal Monitoring
- Imaging Systems for Medical, Astrophysics, Nondestructive Testing and Cargo Monitoring Applications

NUCLEAR & PLASMA SCIENCES SOCIETY NEWS

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Nuclear Science Symposium

The IEEE Nuclear Science Symposium (NSS) offers an outstanding opportunity for scientists and engineers interested, or actively working in the fields of nuclear science, high-energy physics, astrophysics and radiation detection, and related software and simulation for various applications, to meet and discuss their work with colleagues from around the world.

Gyuseong Cho
NSS Program Chair

The scientific program provides a comprehensive review of the latest developments in radiation instrumentation technology, their implementation in experiments in basic science such as particle physics and astrophysics, and their application to biomedical research, homeland security, nuclear power, etc. The NSS program consists of plenary, parallel, and poster sessions. Many interesting and novel papers in the various NSS topic areas listed below will be presented:

- New Concepts in Solid-State Detectors
- Scintillators and Scintillation Detectors
- Photodetectors
- Gaseous Detectors
- Neutron Detectors and ^{3}He Alternatives Development
- Radiation Imaging Detectors
- Environmental Radiation Monitors and Dosimeters
- Analog and Digital Circuits
- Trigger and Front-end Systems
- Digitalization, Acquisition, and Signal Processing Technologies
- Radiation Damage Effects and Radiation-Hard Devices
- Computing and Software for Experiments
- Astrophysics and Space Instrumentation
- Synchrotron Radiation and FEL Instrumentation
- High-Energy Physics Instrumentation
- Nuclear Physics Instrumentation and Applications
- Instrumentation for Biomedical Research
- Instrumentation for Homeland Security
- Instrumentation for Experimental Reactors and Nuclear Power
- Accelerator Technology

Two conveners for each topic have organized the sessions in such a way as to avoid as much as possible conflicts of interest and promote interactions between different subtopics.

We allocated two poster sessions of two hours each on Tuesday Oct. 29th and Wednesday Oct. 30th, from 16:00 to 18:00 pm. Each poster will stay on the board for 2 days to allow for maximal discussion.

This year we have invited four plenary speakers who are leading experts in their fields: Dr. Lyn Evans of the LHC group at CERN, Dr. Nathan Bridges of Johns Hopkins University's Applied Physics Laboratory, Prof. Yeongduk Kim of Sejong University, Korea and Dr. William W. Moses of Lawrence Berkeley National Lab.

The NSS luncheon will include a Korean traditional musical instrument performance by the "Sookmyung Gayageum Orchestra" which has made great effort to perform various kinds of music in the beautiful harmony of gayageum ensemble. Their repertoire ranges from western classical music such as Vivaldi's *Four Seasons*, to South American folk songs, Russian popular songs, the Beatles, ABBA, Simon and Garfunkel, and more, not to mention Korean traditional music pieces.

Educational Short Courses are organized focusing on topics of interest for the scientific community. Detailed presentations and in-depth discussions will be provided by renowned experts in the subject fields.

Ikuo Kanno
NSS Deputy Program Chair

Also we will offer three refresher courses in the following three subjects: Neutron Detection, Calorimetry and Geant4, during lunch on Tuesday, Wednesday and Thursday, respectively.

We would like to take this opportunity to thank all the authors for the excellent scientific contributions to the NSS conference this year, and also all the people who have been working so hard to prepare this event, and in particular the large number of reviewers as well as the topic conveners.

Medical Imaging Conference

The IEEE Medical Imaging Conference (MIC) is the foremost international scientific meeting on the physics, engineering and mathematical aspects of nuclear medical imaging.

The MIC program topics include:

- Emission Tomography Instrumentation (PET, SPECT)
- Other Medical Imaging Technologies (CT, MR, Optical, Ultrasound, etc.)
- Multimodality Systems
- High Resolution and Preclinical Imaging Instrumentation, Techniques and Systems
- Intraoperative Probes and Portable Imaging Systems
- New Detector Materials/Technologies for Medical Imaging
- Image Reconstruction Methods
- Data Corrections and Quantitative Imaging Techniques
- Simulation and Modeling of Medical Imaging Systems
- Front End Readout and Data Acquisition Electronics
- Signal Processing and Image Processing
- Parametric Imaging and Tracer Kinetic Modeling
- Imaging in Radiotherapy

Jae Sung Lee serves as the MIC Program Chair while Craig Levin is the MIC Deputy Chair. They have worked hard to establish a high-level, exciting scientific program, together with 29 MIC Topic Advisors. In an effort to ensure high-quality papers, two or three MIC Topic Advisors were selected for each MIC topic to ensure timely execution of the various activities including the recategorization of papers, revision of the reviewers' evaluation scores, and recommendation of papers to be presented in each session.

This year we received a total of 691 abstracts and accepted 634 of them. Of the 634 accepted abstracts, 129 have been assigned to a plenary session, four nonparallel and five parallel oral sessions and joint sessions; the remaining 505 accepted abstracts were assigned to the MIC poster sessions. We selected the parallel sessions in such a way as to attempt to minimize overlapping interests. As the physical space assigned to the poster sessions is extensive, all the posters will be on display for the entire duration of the MIC meeting to allow ample time for poster viewing.

Jae Sung Lee
MIC Program Chair

Craig S. Levin
MIC Deputy Program Chair

As the field grows, multimodality approaches are becoming more important, providing previously unseen performance in many medical applications. The contents of the MIC this year also embrace them, with a growing emphasis on new X-ray detector technologies and reconstruction algorithms and tomographic imaging techniques in radiotherapy. Two NSS/MIC and one NSS/MIC/RTSD joint sessions will be held on Tuesday as usual.

The official opening of the MIC will be on Wednesday morning starting with plenary talks, given by two distinguished speakers. Dr. Jaemoon Jo who is the Senior Vice President of Samsung Electronics, leading the health and medical equipment development team, will speak on "See the Future of Medical Imaging through IT/CE Technologies." The second speaker will be Prof. Martin G. Pomper who is the William R. Brody Professor of Radiology at the Johns Hopkins Medical School; he will speak on "Forays into Molecular Imaging." The second plenary session will be dedicated to the Hoffman and Hasegawa Awards ceremony followed by four oral presentations that were highly rated by the reviewers. There will be a Student Paper Competition on Friday afternoon which is an oral session devoted to the finalists.

The MIC refresher courses will cover the fundamentals of CT, MRI, statistical image reconstruction, scintillation and solid-state detectors, and journal writing and reviewing.

2013 NSS/MIC/RTSD Continued on **PAGE 4**

2013 NSS/MIC/RTSD Continued from **PAGE 3**

SHORT COURSES

An excellent set of short courses has been organized at the start of the NSS/MIC programs, covering a wide range of nuclear science and medical imaging technology.

Chan Hyeong Kim
Short Course Co-Chair

Paul Lecoq
Short Course Co-Chair

Chul Hee Min
Short Course Acting Co-Chair

Lunch, refreshments, lecture notes, and a certification of completion are also provided as part of the short course registration fee.

» Radiation Detection and Measurement
Sat. Oct. 26th – Sun. Oct. 27th, 8:30–17:00

» Integrated Circuits for Time and Amplitude Measurement of Nuclear Radiation Pulses
Sat. Oct. 26th, 8:30–17:00

» Experimental Techniques in Nuclear and Particle Physics
Sat. Oct. 26th, 8:30–17:00

» Geant4 Simulation Toolkit
Sun. Oct. 27th, 8:30–17:00

» Medical Image Reconstruction
Sun. Oct. 27th, 8:30–17:00

» Physics and Design of Detectors for SPECT and PET
Mon. Oct. 28th, 8:30–17:00

» Molecular Imaging
Mon. Oct. 28th, 8:30–17:00

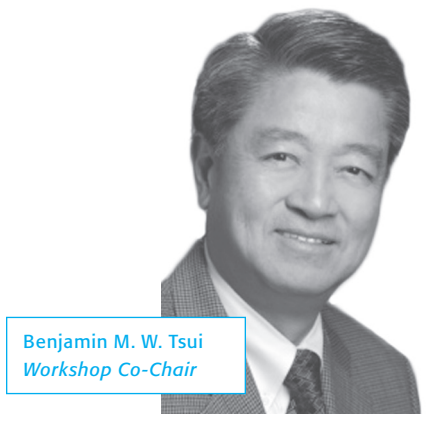
Details can be found on the website at nss-mic.org/2013.

Chan Hyeong Kim
Short Course Program Co-Chair
email: chkim@hanyang.ac.kr

Paul Lecoq
Short Course Program Co-Chair
email: paul.lecoq@cern.ch

WORKSHOPS

The workshop program consists of invited talks with extensive opportunity for questions and discussions.



Benjamin M. W. Tsui
Workshop Co-Chair

Anatoly Rozenfeld
Workshop Co-Chair

This year, eight workshops will be offered:

» New Technologies in Hadron Therapy: Particle Imaging and Optimization of Treatment Delivery
Sun. Oct. 27th, 08:00 – 13:30
Chairs: Patrick Le Dû, IPN Lyon, France; Anatoly Rozenfeld, University of Wollongong, Australia; Katia Parodi, LMU in Munich, Germany; Reinhard Schulte, Loma Linda University, USA

» New Detector Technologies in Radiation Dosimetry and its Applications
Sun. Oct. 27th, 13:30 – 18:00
Chairs: Marco Silari, CERN, Switzerland; Tomas Kron, Peter McCallum Cancer Centre, Australia

» Detectors in Radiation Therapy and Microsurgery with Synchrotron Radiation X-Rays: Dosimetry, Quality Control and Image Guidance
Sun. Oct. 27th, 08:00 – 13:00
Chairs: Alberto Bravin, ESRF, France; Elke Braeuer-Krisch, ESRF, France; Michael Lerch, University of Wollongong, Australia

» Towards a 10 ps Single Soft Photon Detector
Sun. Oct. 27th, 08:30 – 17:00
Chairs: Harry van der Graaf, Nikhef, Amsterdam, the Netherlands; Edoardo Charbon, Delft University of Technology/EWI, The Netherlands; Dennis Schaart, Delft University of Technology/TNW/RST

» Quantitative Four-Dimensional Image Reconstruction Methods
Mon. Oct. 28th, 08:30 – 12:30
Organizers: Benjamin M. W. Tsui, Ph.D.; Steven Meikle, Ph.D.

» PET-MR and SPECT-MR
Mon. Oct. 28th, 13:30 – 17:30
Organizers: Georges El Fakhri, Ph.D., DABR; Benjamin M. W. Tsui, Ph.D.

» Fundamentals and Applications of Photon-Counting X-Ray Detectors
Mon. Oct. 28th, 13:30 – 17:30
Organizers: Katsuyuki (Ken) Taguchi, Ph.D.; Patrick J. La Rivière, Ph.D.

» Intraoperative Imaging
Sun. Nov. 3rd, 08:00 – 10:00
Chairs: John N. Aarsvold, Emory University and Atlanta Veterans Affairs Medical Center USA; Stanislaw Majewski, West Virginia University, USA; Keon W. Kang, Seoul National University, Korea

PUBLICATIONS

The title and authors of accepted papers will appear in the Conference Program Handbook.

Yong Choi
Guest Editor

Abstracts will be contained in USB memory sticks and distributed to the attendees at registration. Full paper texts will be published in the Conference Record, an unrefereed conference proceedings, available only on CD-ROM. Prior to the mailing of the CD-ROM, the conference papers will be posted on the conference website.

In addition, RTSD authors may submit their papers to the conference issue of the *IEEE Transactions on Nuclear Science* (TNS). This is a peer-reviewed journal with significant distribution within the nuclear science and medical imaging communities. Alternatively, relevant papers may be submitted independently to the *IEEE Transactions on Medical Imaging* (TMI). There is no special conference issue. Details are provided on the conference website at nss-mic.org/2013.

COMMERCIAL EXHIBITS

Vendors with products and services related to the NSS, MIC, and RTSD are invited to participate in the Industrial Program which comprises an exhibition and technical seminars.

Ho Kyung Kim
Exhibition Co-Chair

Ronald M. Keyser
Exhibition Co-Chair

An exhibition area central to conference activities will be provided to display the latest in products and innovation. The area will share the same room with the poster sessions and with coffee service.

With the excitement over the LHC, other high-energy physics experiments, new medical-imaging instruments, and instruments for homeland security, the attendance at the IEEE NSS-MIC has been steadily increasing. Attendees are invited to visit the more than 70 booths in the exhibition area and the associated technical seminars to learn more about the newest products. Details can be found on the conference website at nss-mic.org/2013.

TELLER CAN'T TELL!

Although we cannot change the past, we can know it. We can change the future, but we cannot know it.

—Edward Teller

THIS IS (OR IS THIS?) YOUR LIFE

Life is like a B-movie. You don't want to have to leave in the middle of it. But you don't want to see it again.

—Ted Turner

THIS SMARTS

The only choice today is between bigger or smaller unintelligent government.

—George F. Will

AND HOPES FOR THE CONVERSE

Religion is the only force that can make a good man do a bad thing.

—Christopher Hitchens

COMPANION PROGRAM

The Companion Program provides a daily selection of guided excursions to places of interest both within and outside the city.

All tours will depart from and return to the Companion Program Meeting Area in the Convention Center. This meeting area will serve as a lounge for all the registered companions to gather during the conference. The companion program for the attendees will also offer a wide range of options with tours and events from Monday, October 28th to Friday, November 1st. The tours include off-site trips to:

Mi Young Kim
Companion Program Co-Chair

Merry Keyser
Companion Program Co-Chair

- [T1] Gyeongbok Palace and Bukchon Hanok Village
  Monday, October 28th, 08:00–12:00
- [T2] Tea Ceremony Experience and Hanbok Wearing
  Monday, October 28th, 14:00–17:00
  Friday, November 1st, 14:00–17:00
- [T3] Deoksu Palace and Insadong
  Tuesday, October 29th, 08:00–12:00
- [T4] Kimchi Making and Jogye Buddhist Temple
  Tuesday, October 29th, 14:00–18:00
- [T5] Korean Folk Village and Suwon Hwasung
  Wednesday, October 30th, 08:00–17:00
- [T6] Changdeok Palace and N Seoul Tower
  Thursday, October 31st, 08:00–12:00
- [T7] Handcraft Making Experience
  Thursday, October 31st, 14:00–17:00
- [T8] The National Museum of Korea
  Friday, November 1st, 08:00–12:00

Full details and costs for each tour are on the website at nss-mic.org/2013.

GENERAL CONFERENCE EVENTS

In addition to the plenary sessions for NSS/MIC/RTSD, there will be special events such as the Graduates of the Last Decade (GOLD) and Women in Engineering (WIE) sessions (see the program or the conference website for time and dates).

There will also be optional lunches on Monday (NSS), and Tuesday (RTSD), and a MIC dinner on Friday (to attend these, add the option when you register). In additional, all attendees are invited to the Welcome Reception on Sunday evening, Exhibitors' Reception on Tuesday evening and the Conference Reception on Wednesday evening.

GOLD RECEPTION

The IEEE Nuclear and Plasma Sciences Society (NPSS) promotes IEEE GOLD (Graduates of the Last Decade) activities. Consequently, a special reception will be held on Thursday, October 31st from 19:00 to 21:00 at Hall E4 of Coex. Refreshments will be served and attendance is free but restricted to IEEE GOLD members. A comfortable and casual atmosphere allows a warm relationship to be easily established among the attendees. After a short welcome address, the participants will be invited to take refreshment while listening to speakers who look back on their careers in both academia and industry.

Over the past few years, the GOLD reception at NSS-MIC has proven to foster direct contact between young professionals and colleagues at the peak of their careers. Therefore, if you are an IEEE GOLD member or have joined the Nuclear and Plasma Sciences society at this conference, you are cordially invited to participate. If you wish to become a GOLD member, please check the IEEE website (ieee.org) for more information.

SPECIAL WOMEN IN ENGINEERING (WIE) SESSION: CONTRIBUTION OF WOMEN SCIENTISTS TO NUCLEAR SCIENCE AND MEDICAL IMAGING

We are pleased to welcome you to the Women in Engineering (WIE) Session to be held on Thursday, October 31st from 19:00–21:00 at Hall E3, a special session to provide an opportunity for participants to exchange ideas and experiences in an informal setting. The special session will address the theme of women's contributions to nuclear science and medical imaging by presenting encouraging examples from the IEEE NSS and MIC. The session has the following goals:

- How to encourage young women to choose science and engineering as a career
- how to improve the advancement of women in order to minimize the dropout of women from these fields
- how to overcome barriers to the advancement of women already working in science and engineering
- how to combine a career with personal life

Several speakers with outstanding careers in scientific laboratories, industry, and government have been invited to give brief summaries of what they have done to get where they are today and how they have addressed the incorporation of women in their teams. These women and men are role models for generations to come. There will be keynote presentations, followed by a panel discussion on the session issues, which are of importance not only to the society of women in science and engineering but to the general public as well. Students who are beginning their careers in these areas will be invited to participate in the panel discussion. We hope that the WIE Session will help foster efforts to counter a worrisome trend that has been recently noticed in European countries: the more developed the country is and the richer the society is, the fewer women there are in S&E. We cannot afford to lose these talented women and we encourage all members of the IEEE NSS and MIC community to attend.

More specific times and places can be found in the program book and on the conference website at nss-mic.org/2013.

REGISTRATION

All registration formalities for participants are again being handled electronically via the conference website (nss-mic.org/2013.) Participants can register for the conference, short courses, workshops, NSS and RTSD luncheons, MIC dinner and the Companion Program. Early registration is strongly recommended and payment may be made in several convenient ways such as credit card and wire transfer.

Kyeong Min Kim
Registration/Accommodation Co-Chair

THE CONFERENCE HOTEL

The organizing committee of the 2013 NSS/MIC/RTSD is pleased to offer various options for accommodation with discounted rates near the venue. Since the rooms will be reserved on a first-come, first-served basis, early booking is highly recommended. The hotel reservation deadline is September 10th, 2013. The hotel reservation system will ask you to create a new account which is independent of the abstract submission system. For more detailed information, please visit the "Hotel Reservation" page on the website at nss-mic.org/2013.

Christina Sanders
Registration/Accommodation Co-Chair

TRANSPORTATION

Most participants arriving in Seoul using international flights will enter Korea through Incheon International Airport (ICN). ICN sits 52 km west of downtown Seoul. The most convenient way to reach the Coex Center and main hotels is to take either limousines or buses; it takes approximately one hour. You may get information on limousines and buses, and purchase bus tickets at the Transportation Information Counter (near exits No. 2, 4, 9, 13) on the arrival floor of the passenger terminal. Gimpo Airport serves most domestic flight routes in Korea, as well as a few international flights. Transportation options are on the "Travel to Seoul" page at nss-mic.org/2013.

Seong Jong Hong
Local Arrangement Co-Chair

Ralf Engels
Local Arrangement Co-Chair

PAINLESS?

Health nuts are going to feel stupid someday, lying in hospitals, dying of nothing.

—Red Foxx

PROFESSED TRUTH

I can't give you a brain, but I can give you diplomas.

—L. Frank Baum

AND SEEING THROUGH THEM

Tact is the ability to describe others as they see themselves.

—Abe Lincoln

AND THE SIGN BECOMES REALITY

The first sign of a leader's unsuitability for the job is his candidacy.

—George Jonas

ICOPS Beams 2014

41st IEEE International Conference on Plasma Science
20th International Conference on High Power Particle Beams

The 41st IEEE International Conference on Plasma Science (ICOPS) and the 20th International Conference on High Power Particle Beams (Beams) will be held jointly in Washington, DC from May 25th through 29th, 2014, at the Marriott-Wardman Park. For more information, please see our website at ece.unm.edu/icops-beams2014/, subscribe to our mailing list, or contact the Conference Chair, Dr. Joe Schumer (Naval Research Laboratory) at icopsbeams2014@ieee.org.

This four-day joint meeting will cover a range of scientific material in the fields of both plasma science and high-power charged particle beams. In addition to the material traditionally covered in these conferences, two one-and-a-half-day minicourses will also be offered on the topics of "Low Temperature Atmospheric Pressure Plasmas" (led by Prof. John Foster and Dr. Natalia Babaeva, University of Michigan) and "Atomic and Radiation Physics" (led by Dr. Arati Dasgupta of the Naval Research Laboratory).

Dr. Joe Schumer
ICOPS General Chair

These one-and-a-half-day courses will be held on the afternoon of Thursday, May 29th, 2014 and all day Friday, May 30th, 2014.

The organizing committee, as well as the IEEE Plasma Science and Applications Committee, encourage you and your companions to attend for a rich technical experience and to spend time visiting the capitol city of the United States.

Joe Schumer, ICOPS General Chair, can be reached at the Naval Research Laboratory, joseph.schumer@nrl.navy.mil.icops/beams2014@ieee.org. The conference web site is ece.unm.edu/icops-beams2014.

CONFERENCES Continued on **PAGE 7**

Conference Reports

Wayne Meier
SOFE General Chair

Hutch Neilson
SOFE Technical Program Chair

HIGHLIGHTS FROM THE 25th SOFE IN SAN FRANCISCO, CALIFORNIA

Fusion researchers from around the world met in San Francisco from June 10th through 14th for the 25th IEEE Symposium on Fusion Engineering, SOFE (sofe2013.org/), held this year as a standalone meeting. SOFE is a biennial event organized and sponsored by the Fusion Technology Standing Committee of the IEEE Nuclear & Plasma Sciences Society. The technical meeting was attended by over 300 scientists and engineers—a marked increase from recent years—reporting work on a wide range of topics related to the advancement of fusion energy. About one-third of the attendees were from the U.S. and two-thirds from the international fusion community. Wayne Meier from Lawrence Livermore Laboratory (LLNL) served as General Chair, while Hutch Neilson from Princeton Plasma Physics Laboratory served as Technical Program Chair. Over 200 attendees took advantage of the opportunity to tour the National Ignition Facility (NIF) at LLNL as part of their participation at the meeting. Feedback on the technical meeting and the NIF tour has been extremely positive.

A minicourse on plasma-material interactions (PMI) with an emphasis on fusion science and technology as well as industrial PMI was conducted by J.P. Allain (Purdue University) and Brian Wirth (University of Tennessee) on Monday, while the main technical program started on Tuesday. The minicourse was attended by ~20 individuals from a wide range of institutions and countries. As with the Symposium, feedback on the minicourse was very positive.

Anchoring the technical program were numerous plenary and invited papers on topics at the forefront of fusion research and development. In addition, the recent completion of the National Ignition Facility and the start of ITER construction have put fusion engineering in the spotlight. Not least, the San Francisco setting and superb local arrangements by Lawrence Livermore National Laboratory (LLNL) added to the event that drew many of the world's leading fusion scientists and engineers together to discuss the progress and challenges in fusion engineering.

The ITER project had a large presence at SOFE. Discussing ITER were three of the 10 plenary papers, nine of the 45 invited papers, and dozens of contributed talks and posters from the ITER Organization and Domestic Agencies. The many ITER papers, on topics such as blankets, heating and current drive, magnets, first wall, divertors, and assembly, covered progress in nearly all of SOFE's technical areas.

Rem Haange, ITER deputy director-general, opened the meeting with a talk on "ITER Engineering Integration Challenges" that highlighted both advances in fusion technology driven by ITER requirements as well as the technical and organizational challenges of the ITER enterprise. In explaining ITER's challenges, Haange, recipient of the 2011 IEEE Fusion Technology Award, described ITER as "a highly integrated machine with very strong interfaces between the different components."

Carlos Alejaldre, ITER Deputy Director-General, discussed lessons learned in the ITER licensing process. He stressed ITER's significance as the first fusion nuclear facility and called the French government decree authorizing creation of the ITER facility an "historical achievement for fusion development."

ITER and NIF are moving the fusion community into a new era... The 25th SOFE helped to advance the international discussion concerning next-step programs and facilities on the roadmap to realizing fusion.

On the inertial fusion side, the Symposium featured a tour of the magnificently engineered National Ignition Facility (NIF) at LLNL. Michael Dunne, director of laser fusion energy systems at LLNL, described the technical successes achieved by NIF since it went into operation several years ago. Dunne also gave a candid presentation of the gaps between the predicted and achieved target physics performance of NIF, and discussed science-based strategies aimed at closing the gaps. ITER and NIF are moving the fusion community into a new era that is increasingly focused on the final steps to harnessing fusion energy. The 25th SOFE helped to advance the international discussion concerning next-step programs and facilities on the roadmap to realizing fusion.

Attendees heard presentations on research in support of fusion next-steps from many of the world's currently operating tokamaks and stellarators. Also discussed were the construction status of the Wendelstein 7X project in Germany and JT60 SA in Japan—devices that will come into operation later this decade. Several speakers described plans for new facilities such as WEST in France and IFMIF to attack critical fusion-development problems in plasma-exhaust handling and materials. Fusion program leaders from Europe, South Korea, and China described strategies, including next-step facilities and critical R&D missions aimed at moving toward fusion-generated electricity by about mid-century.

Among fusion conferences, the biennial SOFE event is unique in its strong focus on engineering issues. The first symposium, held in 1965 in Livermore, CA, was called "Symposium on Engineering Problems of Controlled Thermonuclear Research." Today the scope of the series has expanded to include such topics as project management, system integration, and fusion roadmap planning, while maintaining a primary focus on fusion's challenging engineering problems and their solutions. The SOFE-2013 meeting occurred at a moment in fusion's history marked by both enormous opportunity and tremendous challenges. Participants at the Symposium agreed that fusion researchers must not let fusion's challenges cause them to lose sight of the opportunities. The next SOFE 2015 meeting will try to replicate the tremendous success of SOFE 2013. The next meeting will be located in Austin, Texas between May 31st and June 4th, 2015. The general chair will be Jean Paul Allain and the technical chair Mark Tillack.

Wayne Meier, General Chair, can be reached at meier5@llnl.gov
Hutch Neilson, Technical Program Chair, can be reached at neilson@pppl.gov

CONFERENCE REPORTS Continued on **PAGE 13**

2014 IEEE NSRE Conference Paris, France

The IEEE Nuclear and Space Radiation Effects Conference will be held July 14–18, 2014, in Paris, at the Paris Marriott Rive Gauche.

The conference will feature a Technical Program consisting of nine 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 14th, a Radiation Effects Data Workshop, and an Industrial Exhibit.

Paris

Paris is called "the City of Lights" and comes to mind immediately as one of the world's most romantic and lovely cities to visit. A capital of the arts, Paris possesses a tremendous cultural richness from its 2000-year history and formidable heritage. With its monuments, museums, great buildings, and its famous characters, Paris never ceases to transport us through time and space. Stroll along the wonderful banks of the Seine river, walk around the artists' village of Montmartre or explore the nearby Luxembourg gardens and you will see why! Paris is a world capital of gastronomy, and the iconic "French gastronomic meal" now has UNESCO Humanity Heritage status. Plan to discover the French and Parisian art de vivre!

A capital of the arts, Paris possesses a tremendous cultural richness from its 2000-year history and formidable heritage.... Plan to discover the French and Parisian art de vivre!

The Paris Marriott Rive Gauche, located in the heart of the famous "Paris Rive Gauche," is the site for NSREC. It offers a unique atmosphere, just a short walk from the Butte aux Cailles and Mouffetard neighborhoods. All major sightseeing attractions are easily accessible from the hotel: Musée d'Orsay and the Louvre, the Eiffel Tower, Champs Elysees, the Arc de Triomphe, Notre Dame, the Latin Quarter, etc. With its variety and specific architecture, the "City of Lights" definitely has something for all tastes.

TECHNICAL PROGRAM

Chaired by Veronique Ferlet-Cavrois, ESA/ESTEC, papers to be presented at this meeting will describe the effects of space, terrestrial, or nuclear radiation on electronic or photonic devices, circuits, sensors, materials and systems, as well as semiconductor processing technology and techniques for producing radiation-tolerant devices and integrated circuits. The conference will be attended by engineers, scientists, and managers who are concerned with radiation effects.

The conference committee is soliciting papers describing significant new findings in the following or related areas:

BASIC MECHANISMS OF RADIATION EFFECTS IN ELECTRONIC MATERIALS AND DEVICES

- Single Event Charge Collection Phenomena and Mechanisms
- Radiation Transport, Energy Deposition and Dosimetry
- Ionizing Radiation Effects
- Materials and Device Effects
- Displacement Damage
- Processing-Induced Radiation Effects

RADIATION EFFECTS ON ELECTRONIC AND PHOTONIC DEVICES AND CIRCUITS

- Single Event Effects
- MOS, Bipolar and Advanced Technologies
- Isolation Technologies, such as SOI and SOS
- Optoelectronic and Optical Devices and Systems
- Methods for Hardened Design and Manufacturing
- Modeling of Devices, Circuits and Systems
- Particle Detectors and Associated Electronics for High-Energy Accelerators and Nuclear Power Facilities
- Cryogenic or High Temperature Effects
- Novel Device Structures, such as MEMS and Nanotechnologies

SPACE, ATMOSPHERIC, AND TERRESTRIAL RADIATION EFFECTS

- Characterization and Modeling of Radiation Environments
- Space Weather Events and Effects
- Spacecraft Charging
- Predicting and Verifying Soft Error Rates (SER)

HARDNESS ASSURANCE TECHNOLOGY AND TESTING

- New Testing Techniques, Guidelines and Hardness Assurance Methodology
- Unique Radiation Exposure Facilities or Novel Instrumentation Methods
- Dosimetry

NEW DEVELOPMENTS OF INTEREST TO THE RADIATION EFFECTS COMMUNITY

RADIATION EFFECTS WORKSHOP

The Radiation Effects Data Workshop is a forum for papers on 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.

PAPER SUBMITTAL

Information on the submission of summaries to the 2014 NSREC for either the Technical Sessions or the Data Workshop can be found at www.nsrec.com. The deadline for submitting summaries is February 7th, 2014.

SHORT COURSE

Attendees will have the opportunity to participate in a one-day Short Course on Monday, July 14th. The theme for the 2014 short course is the Effects of Radiation Environments on Devices and Test Procedures, and is being organized by Frederic Saigne, University of Montpellier-IES. The course will be of interest both to radiation effects specialists and newcomers to the field alike.

INDUSTRIAL EXHIBIT

An Industrial Exhibit will be included as an integral part of the conference and chaired by Dominique de Saint-Roman, Consultant and Odile Ronat, International Rectifier. It will include exhibits 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.

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President's Report

I am now over halfway through my first year as President of the NPSS. It has been a remarkable experience to work with so many dedicated and brilliant volunteers on the IEEE Technical Activities Board (TAB) and the NPSS Administrative Committee (AdCom).

At our recent AdCom meeting, which followed the Nuclear and Space Radiation Effects Conference in San Francisco, I had the honor of meeting Paul Phelps. The NPSS Phelps Continuing Education Grant which has supported the professional development of many students in our field is named for Paul, who led the short course program for NSS for many, many years. Paul related to me how fortunate he has always felt to be a part of a technical community that includes so many remarkable professionals. I could not agree more and found Paul's words inspiring.

In the past eight months, I have had the opportunity to interact with committee members of our sponsored and technically cosponsored conferences. I am extremely grateful to these volunteers who were faced with replanning their conference budgets and schedules at the last minute due to uncertain attendance by United States federal employees and support contractors. The efforts of the committee members were nothing short of heroic. They worked tirelessly to ensure that their conferences were financially solid while taking care to uphold the expected quality of the technical programs and to provide the attendees with conference functions that supported vital collaboration opportunities. Conference week is always a hectic time for conference committees and it was especially the case this year. Our volunteers worked many long hours to accommodate last minute paper withdrawals and attendance cancellations. Hearing about their hard work to make our conferences successful, renewed my commitment to the NPSS. I sincerely thank all of our conference committee members who are dedicated to maintaining the quality of our NPSS conferences under difficult, unforeseen circumstances.

At our AdCom meetings, the Chairs of each NPSS Technical Committee report on the progress of conference planning for as many as four or more future conferences. In this look ahead, we see increasing use of mobile technology to organize and manage our conferences. We are already using optional mobile apps for meeting schedules, and the trend for some committees is to move toward paperless conferences. Not too far in the future, the materials for conferences might well be distributed on electronic tablets that contain conference brochures and schedules, abstract books, short course notes, social function information, maps of the conference venue, public transportation schedules and maps, and information about local attractions. Imagine checking a box to select the papers and exhibits that you want to attend and automatically generating your personal conference schedule with pop-ups to remind you of the title and location of a presentation or the open hours and location of an exhibit.

I would like to recognize and thank our current NPSS Treasurer, Ron Keyser, and our outgoing Treasurer for Conferences, Tony Lavietes. Ron has kindly offered to combine these two Treasurer functions with the goal of making financial operations more efficient and to offload Tony who is serving as the Radiation Instrumentation Technical Committee Chair and the Conference Chair for the 2014 joint IEEE Nuclear Science Symposium and Medical Imaging Conference and Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors Workshop. Tony stepped in to support the Treasurer's position when we did not have a conference budget tool. He successfully championed the development of a standard conference budget tool that could be used for all conferences. His hard work has resulted in easing the burden on reviewing, approving, and tracking conference budgets. Thank you, Tony, for you selfless service to NPSS. And… Ron, thank you for taking on additional responsibility as Treasurer. You have done an exemplary job at developing, submitting, and maintaining our NPSS budgets and working with the IEEE on financial reviews of the NPSS. We appreciate your dedication.

Finally, I thank all of the members of the NPSS for your membership and volunteer support of our Society. I welcome your questions and comments.

Janet Barth, IEEE NPSS President, can be reached at the Electrical Engineering Division, NASA Goddard Space Flight Center, Greenbelt, MD 20771. tel: +1 301-286-5118; email: jbarth@ieee.org.

Janet Barth
IEEE NPSS President

Not too far in the future, the materials for conferences might well be distributed on electronic tablets… Imagine checking a box to select the papers and exhibits that you want to attend and automatically generating your personal conference schedule with pop-ups to remind you of the title and location of a presentation or the open hours and location of an exhibit.

Secretary's Report

As noted above by Janet, the IEEE NPSS AdCom met on Saturday, July 13th, 2013 at the Hyatt Embarcadero in San Francisco, CA, following the 50th Nuclear and Space Radiation Effects conference. This was one of our largest AdCom meetings with 40 people in attendance.

Albe Larsen
IEEE NPSS Secretary and Newsletter Editor

Ron Keyser, our treasurer, noted that we are still in reasonable financial shape but are seeing conference losses due in large part to sequestration and the increasingly severe U.S. government restrictions on conference travel, as well as publication losses. In all we are about $300k below budget for the first half of 2013, and about a million dollars down overall. The last 2011 conference to be closed is in audit, and several 2012 conferences are either closed or in audit. Budgets for some 2014 conferences, less than a year out, have not yet been submitted. TPS, TNS and TMI are all on track to meet their page projections. There is a bonus if they do meet projection to within 5%. The 2014 IEEE budgeting process is behind schedule.

Our president reported on the recent TAB meetings in San Diego. One interesting practice she learned of is MTT's hosting of many small regional conferences in addition to their flagship conferences. Consumer Electronics invited a career development coach to speak at its GOLD gathering. This was well received. She shared the PAC Teacher's Day effort with the group.

She also noted that there are two candidates for Division IV director-elect including Stephen D. Dukes and our very own Bill (William W.) Moses.

The TAB Presidents Forum addressed four major topics:

1) Distribution of Revenue Formula of Xplore® Revenue,
2) Publication Ethics—Particularly Impact Factor Manipulation,
3) Open Access Payment Policy for Delinquent Authors, and
4) Technically Cosponsored Meeting Charges by IEEE.

The Society on Social Implications of Technology is looking for collaborative opportunities with other IEEE groups. The next Sections Congress will be in Amsterdam from August 22nd through August 24th, 2014. The Biometrics Council's provisional status was extended 18 months to December 31st, 2014. The revised Technical Activities mission and vision statement was revised and now reads: *Inspire, Foster and Empower Technology-Centric Worldwide Communities.*

Other discussion issues included publication ethics, especially manipulation of impact factor; the Open Access payment policy for delinquent authors; and charges for technically cosponsored meetings, the number of which is rising dramatically; the smart cities project; and, workshops to help scientists in developing areas in editing papers since these areas are significantly under represented compared with the membership numbers.

TECHNICAL COMMITTEES

Stefan Ritt, the CANPS chair, noted that RT-12 was closed and efforts are focusing on RT-14 to be held in Nara, Japan and followed by a Real Time Summer School from June 2nd through 8th in Osaka. Lecturers will be drawn from our Distinguished Lecturer pool and it is expected that the attendees will be young Asian scientists. RT-16 is scheduled for Padova, Italy.

Mark Tillack reported for J-P Allain, Fusion Technology chair, that the 2013 Symposium on Fusion Engineering was a great success with higher attendance than in many years. Plasma-Materials interactions and ITER were the two dominant paper themes. The short course was on plasma-materials interaction. For more detail see the report by Wayne Meier and Hutch Neilson (p. 6).

Suleman Surti, the NMISC chair and Tony Lavietes, the RISC chair, gave updates on the 2013 NSS/MIC/RTSD meetings to be held in Seoul in late October. This is the first NSS/MIC/RTSD to be held in Region 10 and all indications are that it will be a great success with over 1750 abstracts submitted. Plans for 2014 are well under way, and sites and chairs have been selected for conferences through 2016 and site selection for 2017 is in progress. They have also formed a joint NMISC/RISC committee to develop metrics to evaluate papers, to avoid duplicate or very similar submissions and to improve paper quality overall. Both RISC and NMISC are holding elections for new steering committee members, so look for your ballots and vote if this is your community!

Secretary's Report

Continued from **PAGE 8**

Stan Schriber, chair of the Particle Accelerator Science and Technology Committee, reported that the next NA-PAC will be held in Pasadena from September 29th through October 4th, 2013 with Steve Gourlay as the General Chair. At the PAST TC meeting to be held there, they will select a new TC chair. Stan will have held this post for six years by the end of 2013, a record term for a TC chair. The PAST TC will also begin action to move toward an elected committee.

The 2013 IPAC, held in Shanghai in June, was also a success, but attendance from North America was very small, with less than 10% of the total attendance. Stan commented that the restrictions on U.S. scientists now are akin to the restrictions on scientists from the USSR in the 1960s and 1970s. The IPACS are still working out a joint MOU for the three regions, Asia, Europe, and the Americas. Only Asia is interested in pursuing technical cosponsorship from NPSS.

Rickey Faehl, chair of the Plasma Science and Applications TC, and Juergen Kolb, chair of the Pulsed Power Science and Technology TC, reported that their PPPS conference, the joint ICOPS and Pulsed Power conference that is held on a six-year cycle, was, after much budget readjustment and event changes, quite successful. The program was modified on a real-time basis, with thanks to John Verboncoeur and Mark Crawford, the program chairmen, who had this onerous task, to ensure all oral paper slots were filled. There were 838 technical registrants, 73 companions, 31 exhibitors and 21 minicourse attendees, down from the original projection before all the U.S. government restrictions were put in place, but better by a little than the March projections. Bryan Oliver, the chair, and his committee, managed budget and event juggling masterfully and they all deserve huge credit for a very successful conference. PSAC is also holding an election for seats on their executive committee, so watch for the ballots! The Pulsed Power committee will vote on whether to move toward elected status and will work toward implementing a fully elected committee over the next three years.

Rickey also announced that Rick Temkin of the MIT Plasma Science and Fusion Center was the recipient of the 2013 PSAC award. The Pulsed-Power awards are covered in the Awards section (p. 12). The next ICOPS conference will be held together with the BEAMS conference in Washington, DC and the next Pulsed-Power Conference will be held in 2015 in Austin, TX together with the Symposium on Fusion Engineering.

Marty Shaneyfelt, chair of the Radiation Effects TC, reported that the 2012 NSREC is closed, with the audit in process. The 2013 NSREC, the 50th in this series, ended on July 12th, the day before this meeting. Sequestration led to a significant drop in government funding. Some of this was picked up by corporate supporters, but did not cover the expected donations. Of the 198 papers submitted, 129 were accepted for presentation. The percentage of papers from the U.S. was down but paper submissions from France, China and the Russian Federation increased. The expected attendance was dropped and the conference budget changed to expect 400 attendees and fewer exhibitors. There was a special short course and a DVD of 50 years of TNS papers from NSREC was given to each attendee.

NSREC 2014 will be in Paris, FR and Robert Ecoffet and his team are well on their way to producing an excellent conference. See more detail in the article in Conferences (p. 7).

FUNCTIONAL COMMITTEES

Bill Moses, chair of our Conference Committee and of the IEEE Conference Committee, discussed the impact of sequestration, with the overall conference income about 10% below budget so far this year. IEEE is working with other professional societies to fight these travel restrictions but what Congress wants to see is the financial impact on local businesses in host cities—how many hotel nights lost, how much restaurant and travel revenue lost and so on. They don't seem to particularly care about the impact on U.S. science and engineering programs.

The revised Technical Activities mission and vision statement was revised and now reads "Inspire, Foster and Empower Technology-Centric Worldwide Communities"

Bill also discussed the length of time it is taking to get conference MOUs signed. Now all conferences that are technically cosponsored must have MOUs in place and the number vastly exceeds what was anticipated, so there is a backlog and more IEEE staff have been assigned to address this, with attention focused on conferences in the near future. They are simplifying the procedure and are especially trying to simplify the MOUs for cosponsorship of conferences within IEEE. ICX, the new conference software is being rolled out slowly and the pieces are being integrated so that this is a comprehensive system. IEEE is also working toward aggregate hotel bookings so that individual conferences aren't approaching hotel chains. In aggregate our conferences should be able to get much better hotel rates and concessions. They are also working to change the use of the term "sponsorship" in IEEE policy since this causes much confusion.

Another issue is that of conference records vs. *Transactions*. In some communities the conference record is more important. In others, the thoroughly peer-reviewed *Transactions* are more important. And a related issue is the percentage of papers accepted for a conference. There is strong feeling that 50% acceptance is good, but that 30% acceptance is better, and all conference materials should be reviewed before they are submitted to Xplore® for posting. For some conferences, papers are submitted months before the conference, reviewed, modified and the conference record CD is distributed at the conference. The drawback, of course, is that the results on the CD are months out of date. Some derivative 'beliefs' are that conference records containing abstracts only should not be posted to Xplore®; papers with the same or similar title in the conference record and the *Transactions* should not both be posted; and there should not be similar content in a conference record paper and a *Transactions* paper. Papers on a conference record CD should not go into Xplore® if the paper has been submitted to a *Transactions*. If the paper is rejected by the *Transactions*, the paper can later be posted to Xplore® as part of the conference record.

The costs for technically cosponsored conferences are becoming significant. The Meetings, Conferences and Events group is impacted financially by this to just about the same extent that they are for fully sponsored conferences. A fee structure is being developed to defray these costs. As an example, NPSS pays about $51k per year for technically cosponsored conferences. IEEE overall pays about $2M.

Craig Woody, Awards chair, noted that our NPSS awards had been reported at the March meeting. Nominations for 2014 awards are due by January 31st.

Sal Portillo, Membership chair, reported that most NPSS members are in the U.S. and we need to beef up recruiting in other regions, especially Asia and South America. We also need to increase recruiting of students and young scientists and engineers. It would be useful to have a list of nonmember attendees at each conference, to target them. It does help when the conference includes IEEE status on the attendees' badges. Other goals include getting rid of paper forms at the membership desks and working on retention.

Steve Gold, Chapters and Local Activities chair, noted that there are 21 chapters and one student branch. The Chicago and Benelux chapters are inactive and have reached a position where they can be dissolved. There is support for active chapters that file the appropriate reports. The East Ukraine, Singapore and Seoul chapters have received funding. There is interest from Argentina and Beijing to form new chapters. They need 12 members. It may be suggested that Argentina partners with Brazil to form a chapter. There was a Region 8 Chapter coordination meeting with the goal of promoting greater chapter activity and using best practices. The Alexandria Student Branch is very active and very enthusiastic. We hope to hear much more from them.

Dan Fleetwood, Distinguished Lecturers chair, noted that 12 lectures have been given or planned before the end of July. Three speakers received full or partial funding, including Pace VanDevender who added a lecture to a vacation in India that cost us very little. New Distinguished Lecturers are Patrick Le Dû, Stefan Ritt and John Sethian.

Hal Flescher, Finance chair, reported that the Finance committee met face to face for the first time in a long while. Committee members are the chairs of the three largest TCs (RISC, PSAC, RE), Publications Committee chair, the president, vice president and treasurer. The size of our reserves is an issue and we need to develop some worthy initiatives in addition to our support of the Community Solutions Initiative (Haiti). Possible ideas are increased student support, increased support of WIE activities, a science fair award for high school students, and support of members from developing countries who need assistance to attend conferences. The committee will work on these and other ideas and will meet regularly in conjunction with AdCom meetings.

Bob Reinovsky, Nominations chair, announced that there were candidates for all five AdCom seats that will be vacated on December 31st, as well as candidates for the three technical committees that will replace members. Ballots will go out in mid-August, with most people voting electronically. Less than 10% of our membership has requested paper ballots.

Paul Dressendorfer, Publications chair, reported that the society's five-year periodical review was held on June 27th. Key issues, again, were term limits for editors and a discussion of administrative vs. editorial rejection of papers. Discussions continue on how to handle medical imaging papers. Perhaps this will mean a new journal or another alternative might be special issues of TMI. Discussions continue.

Peter Clout, Communications chair, introduced our new literature, all with a fresh look. The newsletter has also been redesigned and our large posters used for conference recruiting are in final redesign stages. Next we'll begin redesigning our web pages to make them more dynamic and interesting. The new web design will translate across all media including smart phones and tablets. Dick Kouzes discussed in detail the extent of redesign discussed at a meeting with our design house which he and Albe Larsen attended in person and Peter Clout attended by phone.

Christoph Ilgner reported on GOLD activities. We need to get more information about new members' technical profiles to help connect them to the right technical committees, and get them involved. Higher involvement leads to better retention.

Patrick Le Dû, Transnational Committee chair, commented on trying to better balance committee membership. To date the Region 8 members have dominated. Their number has been cut from 13 to eight, including the addition of a UK member. Region 10 now has four members, but Region 9 still has only one member. Christoph Ilgner, guest editor, also reported on the successful ANIMMA conference (see report, p. 13) and the value of having the membership desk together with the *Transactions* desk.

Dick Kouzes noted that as about three-quarters of ANIMMA papers are related to the nuclear power industry, it is our principal connection to nuclear power. There is also one session at NSS.

LIAISON REPORTS

Ray Larsen, liaison to the Society for the Social Implications of Technology and Community Solutions Initiative (CSI) gave an update on the work in Haiti, Nigeria, Cameroon and South Sudan. Sirona Haiti has recently received a substantial grant from UNEP to build SunBlazers to provide home lighting kits to 3000 homes. Sadly, one of the units already installed was destroyed in an intervillage flare-up in which not only the SunBlazer but 40+ homes were torched. CSI, which is housed in the Power & Energy Society (PES) is working with the IEEE Foundation and launching a major fundraising drive with a proposed $500k form PES and matching funds to be able to implement at least 10 start-ups a year as well as new initiatives.

Ray is also the Projects Subcommittee Chair of the IEEE Special Interest Group on Humanitarian Development (SIGHT) and a member of the Steering Committee. They are looking at projects that will have a significant impact on the 90% of the world's population who receive only 10% of the world's wealth.

Our IEEE-USA liaison, Sandra Biedron has, together with Stephen Milton, spent considerable time on Capitol Hill discussing the effects of sequestration and travel cuts on our science programs.

Peter Clout, our ICALEPCS liaison, reported that he and Patrick Le Dû attended the ICALEPCS program committee meeting in late May. The committee reviewed the 546 abstracts submitted. The MOU for NPSS technical cosponsorship was finally signed after 10 months. The 2015 conference will be held in Melbourne, Australia. They are planning on a 15% drop in attendance because the ICALEPCS community there is small and because it is an expensive venue.

Allan Johnston, our WIE liaison, reported that there was a face-to-face meeting of WIE liaisons and committee members in Atlanta this May. Roberto deMarco, IEEE President-elect was in

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Technical Committees

COMPUTER APPLICATIONS IN NUCLEAR AND PLASMA SCIENCES

Stefan Ritt
Chair, CANPS

The next Real-Time Conference will take place in the lovely deer park inside the city of Nara, Japan, in spring 2014. It will be organized by the University of Osaka, the RIKEN Research Institute and the KEK High Energy Accelerator Research Organization under the chairmanship of Masaharu Nomachi. The historic town of Nara has many old temples and shrines and is identified as an UNESCO world cultural heritage site; it is, therefore, a major center for tourism in Japan and a perfect place to hold this conference.

In conjunction with the Real-Time Conference we will organize for the first time a summer school for real-time applications in particle and nuclear physics. This school will bring together interested students, mainly from Asia, and distinguished lecturers from our community who have many years of experience in this field. The course will allow young scientists and engineers to learn the basics of real-time applications, both in lectures and in practical lab courses.

The Real-Time Conference 2016 will be held in Padova, Italy, organized by the Consorzio RFX, Euratom Enea-Association under the chairmanship of Adriano Luchetta, our 2010 CANPS price winner.

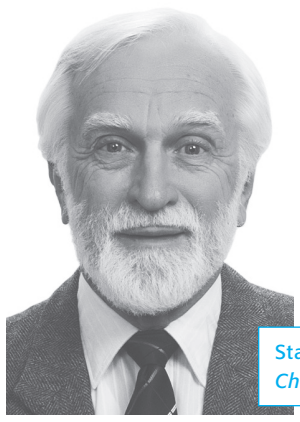
More information about the CANPS committee with an updated member list can be found at ewh.ieee.org/soc/nps/tc-canps.html.

Stefan Ritt, chair of the Computer Applications in Nuclear and Plasma Science (CANPS) Technical Committee, can be reached at the Paul Scherrer Institute, CH-5232 Villigen, Switzerland. Phone +41 56 310 3728; email: stefan.ritt@psi.ch

PARTICLE ACCELERATOR SCIENCE AND TECHNOLOGY NEWS

Chair

Stan Schriber serves as the Chair of the Particle Accelerator Science and Technology (PAST) Technical Committee (TC) from 2009 January until 31 December 2013.



Stan Schriber
Chair, PAST

Organization

The PAST TC is organized with the following responsibilities. As the past PAST Chair, Ilan Ben-Zvi (BNL) is in charge of the Fellows and Awards subcommittee responsible for nominating our PAST award candidates and fellows. As the former past PAST Chair, Bruce Brown (FNAL) is in charge of our Web and Communications subcommittee; responsible in part for our PAST TC web site. Our elected PAST TC member for IEEE-NPSS AdCom, Bob Zwaska (FNAL), is chair of our Nominating, Education and Outreach subcommittee (includes Women in Science and Engineering events) working with the previous PAST TC elected member subcommittees should get in touch with the subcommittee chair.

Other members of the PAST TC committee are PAC'11 chair Thomas Roser (BNL), IPAC'12 chair Vic Suller (LSU), NA-PAC'13 chair Steve Gourlay (LBNL), IPAC'15 chair Andrew Hutton (JLab), NA-PAC'16 chair Marion White (ANL) and IPAC'18 chair Lia Merminga (TRIUMF).

Both recent conferences, PAC'11 and IPAC'12, were outstanding conferences scientifically, culturally, educationally, as well as financially.

Sandra Biedron (Col. State), responsible in part for nominating members who could be elected to serve on the IEEE NPSS AdCom, and for managing and operating our IEEE booths at NA-PAC and IPAC conferences held in North America. And finally, Paul Schmor (TRIUMF) is chair of our Conferences subcommittee. Anyone interested in participating in any of these

Conferences

A significant change to the Particle Accelerator Conferences (PACs) held in North America which are jointly sponsored by IEEE-NPSS and APS-DPB has been managed successfully. A new series of international particle accelerator conferences was initiated with agreements between Europe, Asia and North America. The first international conference IPAC'10 was held in Kyoto, Japan in May 2010, the second IPAC'11 was held in San Sebastian, Spain in September of 2011, the third IPAC'12 was held in New Orleans, Louisiana in May of 2012 and the IPAC'13 was held in May 2013 in Shanghai, China. The world location cycle will continue every year in the spring, repeating the order of Asia, Europe, North America. In addition, because three years was considered too long a period of time between particle accelerator conferences held in North America, the PAC conferences will continue as regional NA-PAC conferences midway between the IPACs that will be held in North America, except for PAC'11 which was planned before the IPACs were formalized. So, there will be an accelerator conference held in North America every 18 months with the regional NA-PACs held in the fall and the IPACs held in the spring—e.g. IPAC'12 spring 2012, NA-PAC'13 fall 2013, IPAC'15 spring 2015, NA-PAC'16 fall 2016, IPAC'18 spring 2018, etc. IEEE-NPSS and APS-DPB will cosponsor all NA-PACs and only the IPACs held in North America.

PAC'11 held in New York City, was the 24th PAC, being the last of the highly successful particle accelerator series held in North America under the PAC banner, as well as the first regional North American PAC (NA-PAC) serving accelerator scientists, engineers, and students. IPAC'12 was the third in the new international series of IPAC conferences and the 25th in the series of xPAC conferences held in North America. IPAC'12 was hosted by LSU 2012 May 20th–25th at the Ernest N. Morial Convention Center in New Orleans, Louisiana. Both recent conferences, PAC'11 and IPAC'12, were outstanding conferences scientifically, culturally, educationally, as well as financially.

Planning continues for the next North American Particle Accelerator Conference (NA-PAC'13, the 26th xPAC conference in North America) which will be organized jointly by the Lawrence Berkeley National Laboratory and the SLAC National Accelerator Laboratory (SLAC). The conference will take place Sept. 29th–Oct. 4th, 2013 in the Pasadena Convention Center. The Scientific Program Committee chaired by Alex Chao, SLAC, has developed an exciting program of invited oral presentations which is now published at the conference website, napac13.lbl.gov.

PAST Chair

Stan Schriber will be stepping down as chair of the PAST TC in January 2014. The PAST TC will be discussing possibilities for a new PAST TC chair at their October 1st, 2013 meeting during the NA-PAC'13. Following the PAST TC meeting, a recommendation for a new chair to begin duties in January 2014 will be made to the NPSS President for action. Members of PAST within NPSS wishing to make recommendations for this position should get in touch with Stan Schriber at the email address listed below, so this information can be included during the October 1st PAST TC meeting.

Stan Schriber can be reached at his home in Eagle, ID 83616 USA; Phone: +1-208-631-8208; email: schriber@nscl.msu.edu

PULSED POWER SCIENCE AND TECHNOLOGY

Juergen Kolb
Chair, PPST

The Pulsed Power Science and Technology Committee has been chaired by Jane Lehr for the past two years and on behalf of the Committee and the community that the PPST represents, I would like to thank Jane for her service. Under her thoughtful leadership she has prepared the committee very well for upcoming challenges and changes. Jane remains a member of the PPST but some of our colleagues have reached the end of their terms of service in 2012 and our thanks go to Ray Allen, Mark Crawford and Pat Corcoran for their commitment over the last six years. At the same time I would like to welcome the new members on our committee: Jose Rossi, Keith LeChien, and Georg Mueller. As always you can find more information on our committee: ewh.ieee.org/soc/nps/tc-ppst.html.

During the last year our Committee has been conducting an intense discussion on how to best serve the pulsed power community. We are still in the process but as a most immediate outcome we are currently going through a major revision of our constitution and bylaws; a process which we hope to have concluded by the end of 2013. One important change that was already approved by the Committee in March was the creation of the position of a Vice Chair, who will support the Technical Chair. In June the Committee elected Andreas Neuber to this position. Some other changes have already been made to our Awards Committee in 2012. The Awards Committee was chaired by Ian Smith until the end of last year. Ian and his team have done a great job recognizing many esteemed members of our community with our most prestigious awards and I thank them for their service. The Awards Committee is currently chaired by Frank Peterkin and he and his Committee have found most distinguished recipients for this year's awards. It is my pleasure to congratulate Dr. Ian McNab, recipient of the Erwin Marx Award and Dr. Scott MacGregor, recipient of the Peter Haas Award. Both awards have been presented at the 2013 IEEE Pulsed Power and Plasma Science Conference, which was held from June 16th–June 21st in San Francisco.

As a community we are pleased that after six years we had an opportunity to join once more the Pulsed Power Conference (PPC) and the International Conference on Plasma Science (ICOPS) as the Pulsed Power and Plasma Science conference and, accordingly, meet with our colleagues and friends from the plasma science and applications community. Given the current uncertainties about government travel restrictions we grew a little nervous about this conference. I'm therefore very happy to report—and to applaud Bryan Oliver, who was the chair of this combined conference—that the conference was a great success, thanks to the tireless efforts of Bryan and his team. The technical program of this event was put together by John Verboncoeur and Mark Crawford, together with an assorted panel of dedicated session organizers, who had to review 1096 abstracts, submitted from 43 different countries.

Our next Pulsed Power Conference will be held in Austin, Texas from May 31st–June 4th, 2015, and will be chaired by Mark Crawford. I encourage you to mark the date in your calendars now and I hope to see you for what will certainly be a great meeting.

Juergen Kolb, PPST chair, can be reached by email at jkolb@odu.edu or by phone at +49 3834554 3950.

RADIATION EFFECTS NEWS

Nominations are due January 31st, 2014, for awards presented at the IEEE NSREC 2014 Conference July 14th–18th, 2014 in Paris, France.

Radiation Effects Award Nominations

Nominations are currently being accepted for the 2014 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 $3000 cash award and plaque will be presented at NSREC Paris. Nomination forms are available electronically at nsrec.com/nominate.htm and must be submitted by January 31st, 2014. Additional information can be obtained from Nick van Vonno, Senior Member-at-Large for the Radiation Effects Steering Group. Nick can be reached at 321-725-7546 or at nvanvon@intersil.com.

Paul Phelps Continuing Education Grant Nominations

Nominations are currently being accepted for the 2014 Paul Phelps Continuing Education Grant. The purpose of the grant is to promote continuing education (attendance at the 2014 NSREC Short Course) and encourage membership in NPSS. University professors may nominate outstanding student members of NPSS. Unemployed members of NPSS who need assistance in changing careers can also be

Teresa Farris
Publicity Vice-Chair

nominated for the award. The $750 cash award will be distributed before the 2014 NSREC in Paris, so that the award recipient can apply the funds towards covering travel costs to the short course. The award also includes complimentary short course registration.

Nomination forms are available electronically at nsrec.com/steering.htm and must be submitted by January 31st, 2014. Additional information can be obtained from Gary Lum. Member-at-Large for the Radiation Effects Steering Group. Gary can be reached at gary.lum@lmco.com or 408-756-0120.

2013 PHELPS AWARD

The 2013 Paul Phelps Continuing Education Grant was awarded to two student members from the radiation effects community. At the opening of the NSREC technical sessions (July 8th, 2013), Marty Shaneyfelt, Chairman of the Radiation Effects Steering Group, announced the grant awards. The grants included tuition for the 2013 NSREC Short Course and a check for $750.

The purpose of the Phelps Grant is to promote continuing education and encourage membership in the Nuclear and Plasma Sciences Society (NPSS). The bases for judging are exceptional promise as a graduate student working in any of the fields of the NPSS, "exceptionally good work" in those fields for currently unemployed NPSS members, and an expectation that attendance at an NPSS-sponsored short course will result in an improved possibility of obtaining a job within the radiation effects community. The two recipients of the 2013 Paul Phelps Continuing Education Grant were Nihaar Mahatme, Vanderbilt University and Arto Javanainen, University of Jyväskylä.

Nihaar N. Mahatme

Nihaar N. Mahatme (S'06) received the B.E. degree in electrical engineering from the University of Mumbai, India, in 2009 and the M.S. in electrical engineering from Vanderbilt University, Nashville, TN, in 2011. He is presently pursuing his Ph.D. at Vanderbilt University where his research interests include circuit design for low-power and soft-error reliability. He has interned with IMEC, Belgium, Taiwan Semiconductor Manufacturing Company, Taiwan and CISCO Systems, Inc.

Arto Javanainen

Arto Javanainen's Ph.D. work was approved with honors in 2012 in the Department of Physics, University of Jyväskylä, Finland. His Ph.D. thesis, titled "Particle Radiation in Microelectronics," dealt with the fundamental aspects of ion-matter interactions and their effects on electronic materials and basic devices. Since graduation his research has been focussed on Single Event Gate Rupture (SEGR), and physical processes involved in this phenomenon. Arto has authored five and co-authored six peer-reviewed publications. He was nominated by Dr. Ari Virtanen of University of Jyväskylä.

Teresa Farris, the Radiation Effects Vice-Chair for Publicity, can be reached at (719) 594-8035; email: teresa.farris@aeroflex.com.

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Functional Committees

Nominations for NPS Society Awards, open to anyone in any field covered under the Nuclear and Plasma Sciences umbrella, including the Merit Award, the Richard F. Shea Distinguished Member Award, the Early Achievement Award and the four possible Graduate Scholar Awards are due by January 31st, 2014. It isn't too early to start identifying potential nominees and preparing nomination forms. Submit nominations to Craig Woody (woody@bnl.gov) by January 31st, 2014. See the NPSS web site (ewh.ieee.org/soc/nps/docs/npssawards.pdf) for forms and for tips on writing successful award nominations.

Craig Woody
Awards Chair

AWARDS

Fusion Technology Award

2013 FUSION TECHNOLOGY AWARD WINNER: PHILIP HEITZENROEDER

Philip Heitzenroeder of the Princeton Plasma Physics Laboratory is the recipient of the 2013 Fusion Technology Award. This award recognizes outstanding contributions to research and development in the field of Fusion Technology.

Heitzenroeder received his Bachelor of Science degree in Mechanical Engineering in 1969 from the New Jersey Institute of Technology (NJIT). He furthered his education with graduate studies at both Syracuse University and NJIT. Upon graduation, his career began at the

Phil Heitzenroeder
2013 Fusion Award Recipient

IBM Corporation as an Associate Engineer. In 1972 he joined the Princeton Plasma Physics Laboratory (PPPL) as a Coil Section Engineer building the toroidal field coils of the Princeton Large Torus (PLT), laying the groundwork for the active coil research conducted at PPPL today.

Since then, Heitzenroeder has had increasing responsibilities, particularly in the magnet design and manufacturing area for every major device built at PPPL as well as those at collaborating institutions, including ITER. Heitzenroeder has also led many engineering design teams associated with "next-step" devices such as TFCX, CIT, BPX, SSAT, TPX, and FIRE. He is currently the Head of the Mechanical Engineering Division at PPPL responsible for advanced engineering design and analysis activities.

In addition to his technical leadership, Heitzenroeder has also made the time to serve on the Fusion Technology Committee where he served as the Chair from 2002-2005, as an elected member of the NPSS AdCom, and as General Chair of the 19th Symposium on Fusion Engineering (SOFE). In 1998, Heitzenroeder received the PPPL Distinguished Engineering Fellow award and in 2006 he went on to receive the prestigious Kaul Award.

Citation: *For his dedication to advancing the engineering and technology of experimental fusion devices in magnet design and manufacturing, and his leadership of the Fusion Technology Committee of the IEEE NPSS.*

Phil Heitzenroeder can be reached by email at pheitzen@pppl.gov

2013 Symposium on Fusion Engineering Best Student Paper Award

ELEANOR GRIEVESON

Eleanor Grieveson received the 2013 Fusion Engineering Best Student Paper Award for the paper titled: "Investigation into Irradiation Effects in ODS-Alloys Using Ion Implantation and Micromechanical Testing."

Grieveson is a Materials Science student in the third year of studying for her D.Phil. (Ph.D.) at the University of Oxford. She received her Bachelor's degree at Corpus Christi College, Oxford, receiving a M.Eng. in Materials Science in 2010. Her research focuses on the effects of irradiation damage on the mechanical properties of materials for fission and fusion power. Grieveson's experimental techniques include ion implantation, micromechanical testing

Eleanor Grieveson
2013 Fusion Student Award

and transmission electron microscopy. She is sponsored by Rolls-Royce Plc. and is a freeman of the Worshipful Company of Founders.

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Functional Committees Continued from **PAGE 11**

PULSED-POWER AWARDS

Every two years the pulsed-power community honors two of their most distinguished and accomplished members through the Erwin Marx Award and the Peter Haas Award. The Erwin Marx Award recognizes outstanding contributions to pulsed-power technology by an individual over an extended period of time. The Peter Haas Award recognizes outstanding contributions to pulsed-power technology resulting from an individual's continued effort to develop programs of research, education, and information exchange that are the basis for progress in pulsed power. Both awards are conferred through the Pulsed-Power Science and Technology Committee on behalf of the Nuclear and Plasma Sciences Society and presented at the Pulsed-Power Conference. The conference was held this year together with the International Conference on Plasma Science in San Francisco from June 16th –June 22nd. Awardees were selected in a rigorous process by the PPS&T Awards Committee. This year's awards committee was chaired by Frank Peterkin who recruited members of the awards committee from the ranks of previous award winners and other esteemed members of the pulsed power community at large.

2013 IEEE Erwin Marx Award

IAN MCNAB

Ian McNab
2013 Erwin Marx Award

Dr. Ian R. McNab (Institute for Advanced Technology, The University of Texas at Austin) was born and educated in Britain and moved to the United States with his family in 1975. He holds a Ph.D. in Applied Sciences (Magnetoplasmadynamics, 1974) from the University of Reading and a B.Sc. (Honors Physics, 1960) from the University of Leeds. From 1995 to 2013 Dr. McNab was a scientist and manager at the Institute for Advanced Technology (IAT) at the University of Texas in Austin. His positions included Institute Director (Acting), Chief Scientist, and Director of the Electromagnetic Systems Division. He was involved in IAT's research programs on electromagnetic and pulsed-power technology on behalf of the University and Institute sponsors, including the U.S. Army, Office of Naval Research, Air Force Office of Scientific Research, Defense Advanced Research Projects Agency. From 1990 to 1994, Dr. McNab was the Vice President for the Major Systems Division at Maxwell Laboratories, Inc., San Diego, CA, where he was involved in electrical pulsed-energy systems and development programs for the U.S. and Allied Governments, universities and industry. From 1984 to 1990, Dr. McNab worked at Westinghouse in Sunnyvale, CA where he was the Technical Director for electromagnetic and pulsed-power programs. From 1975 to 1983, Dr. McNab was employed by the Westinghouse Research Center, Pittsburgh, PA, where he was a scientist and manager working on R&D programs in liquid metal pumps, advanced current collection, tribology for sliding contacts, homopolar generators, and capacitor and rotating machine-powered electromagnetic systems. Prior to moving to the U.S., Dr. McNab worked at the International Research and Development Co. in Newcastle, England from 1960 to 1975, where he was involved in research on magnetoplasmadynamic (MPD) generators, metal-plated carbon fiber brush technology for superconducting generators, development of pulsed laser components, and thermoelectric and thermionic direct conversion techniques for electric power generation. Dr. McNab is a Fellow of the IEEE, the Institute of Physics (UK) and the British Interplanetary Society. He has published 140 scientific papers, including 40 in the *IEEE Transactions*, and is author/coauthor on 15 U.S. and UK patents. He has been a member of the Steering Committee of the International EM Launcher Symposia since 1982 and was a member of the IEEE Pulsed-Power and Plasma Sciences Committee for nine years. Dr. McNab has served as a professional consultant for many organizations in the U.S. and overseas and has given presentations at many conferences. He was awarded the Peter Mark Medal for Outstanding Contributions to Electromagnetic Technology in 1990 and the Lavrentyev Medal for Accomplishments in Electromagnetic Technology from the Russian Academy of Sciences (Siberian Branch) in 2003.

Citation: *For pioneering contributions to the research, development, and demonstration of hypervelocity electromagnetic launchers, mega-ampere rotating machine generators, and multi-megajoule pulsed power systems for railguns.*

2013 IEEE Peter Haas Award

DR. SCOTT J. MACGREGOR

Scott MacGregor
2013 Peter Haas Award

Dr. Scott J. MacGregor (Dept. of Electronic and Electrical Engineering, University of Strathclyde) received the B.Sc. and Ph.D. degrees from the University of Strathclyde, Glasgow, U.K., in 1982 and 1986, respectively. He is currently with the University of Strathclyde, where he became a Pulsed-Power Research Fellow in 1986, Lecturer in pulsed-power technology in 1989, Senior Lecturer in 1994, Reader and Professor of high-voltage engineering in 1999 and 2001, respectively. He became Head of the Department of Electronic and Electrical Engineering in 2006 and has been Executive Dean of the Faculty of Engineering at the University of Strathclyde since January 2010. He became the Head of the Pulsed-Power Research Group in the Department of Electronic and Electrical Engineering in 1995. He has played a leading role in establishing the international reputation in the field of high-voltage engineering and pulsed-power technology, including industrial application, and has made significant contributions to both fundamental and applied research in these areas. Notable contributions include research into high-speed electrical breakdown of gaseous and liquid insulating systems, repetitive high-speed gas switching and the development of compact, repetitively-rated modulators for a range of applications, including ozone production and pulsed microwave applications, underwater plasma-acoustic sources, pulsed power for fragmentation of materials and pulsed power enabled plasma channel drilling technology. In 1998, along with colleagues in the Department of Bioscience, he commenced multidisciplinary research to investigate the biocidal effects of plasma generation in liquids for disinfection purposes as well as the application of nonthermal plasma and pulsed electric field treatment for bio-decontamination. In 2004, he established a unique research facility at the University of Strathclyde: The Robertson Trust Laboratory for Electronic Sterilization Technologies (ROLEST). He is currently Director of ROLEST and is working in partnership with local hospitals, industrial partners, and the Department of Biomedical Engineering, to develop novel electrically based technologies for the inactivation of pathogenic microorganisms. In 2011, Professor MacGregor and ROLEST colleagues received the prestigious Times Higher Education Award for "UK Research Project of the Year" for the development of a unique technology for the control of pathogens responsible for hospital acquired infections through the use of High-Intensity Narrow-Spectrum Light (HINS® Light). This breakthrough technology is based on the unique bactericidal properties of HINS® Light and is already being trialed in clinical burns units, vascular wards and intensive care facilities. Professor MacGregor has published more than 100 papers in peer-reviewed journals and in excess of 200 papers in the proceedings of international conferences and has supervised more than 40 Ph.D. students to completion. Professor MacGregor was Chairman of the IEE Symposia Series on Pulsed Power from 1992-1998, Chairman of the 13th International Conference on Gas Discharges and their Applications in 2000, and is a member of the Executive Management Committee for this Conference series (2000-present). In 2006, he established the UK Universities High Voltage Network (UHVnet) to build research and educational relationships between academia and industry and recently opened the 6th UHVnet Colloquium (2013). Professor MacGregor is a Chartered Physicist, a Member of the Institute of Physics and a Member of the IEEE (1995).

Citation: *For fundamental contributions to the research and transition of pulsed-power technologies from laboratory phenomena to industrial, environmental, and bio-medical applications, and for dedicated service to the current and future pulsed power community through the establishment of international educational programs, symposia, and conferences.*

Pulsed Power Student Awards

At the Pulsed Power Conference we also recognize outstanding students in our community through the Arthur H. Guenther Pulsed Power Student Award. A recipient is selected each year, with the prizes awarded biennially at the Pulsed Power Conference Banquet.

Congratulations! Two students have been jointly awarded the 2012 Arthur H. Guenther Pulsed Power Student Award: Mr. Shurik Yatom, (Ph.D. candidate at Technion-Israel Institute of Technology) *"For academic excellence and research accomplishments in numerical and experimental investigations of cathode electron emission and nanosecond discharges in pressurized gases,"* and Mr. Jouya Jadidian (Ph.D. candidate at Massachusetts Institute of Technology) *"For academic excellence and research accomplishments in the areas of high pulsed magnetic fields, spark gap switching, and modeling of streamers in liquids."*

The 2013 Arthur H. Guenther Pulsed Power Student Award was presented to Mr. Jacob C. Stephens (Ph.D. candidate at Texas Tech University) *"For academic excellence and research accomplishments in modeling and experimental investigations of dense metal plasmas, fuse opening switches, and surface flashover."*

IEEE Fellows Committee

NPSS was requested to evaluate twelve nominations for elevation to IEEE Fellow and the NPSS Fellow Evaluation Committee finished its portion of the evaluation process in the middle of June. Now, those nominations, as well as the ones from other IEEE Societies as well as those submitted through the regions are in the hands of the IEEE Fellow Committee who will make their recommendations to the Board of Directors who will then name the Fellow Class of 2014. The new Fellows will be officially elevated on January 1st, 2014.

In NPSS, the success of the evaluation process…is due to the noble generosity and magnanimous spirit of our Fellow Evaluation Committee.

Jane Lehr
Chair, Fellows Committee

The portion of the process performed by the Society Fellow Evaluation Committee is strictly technical in nature and eventually consists of a ranked list of the nominees with summaries of their accomplishments and impact. For NPSS, with its vast technical diversity, this is a unique challenge because the FEC is often comparing the impact of contributions in very different technical fields. To use a colloquialism, we "compare apples and oranges."

In NPSS, the success of the evaluation process—in my opinion as its Chair—is due

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Conference Reports Continued from **PAGE 6**

Authors Artem Kuskov (right) and Gabriel Shipley (left) of the University of New Mexico.

ICOPS 2013: THE VIEW OF TWO UNDERGRADUATE RESEARCHERS

By Artem Kuskov and Gabriel Shipley

When first told about the opportunity to present our work at a technical conference, we were understandably quite surprised and humbled. As a sophomore and a junior in undergraduate study at the University of New Mexico (UNM), we had just completed a semester's worth of engineering courses. These courses, in all their difficulty, were accompanied by a schedule filled to the brim with determined focus on our respective projects in the Pulsed Power, Beams and Microwaves Laboratory in the Department of Electrical and Computer Engineering. Our research projects involved the development of diagnostics for spectroscopic measurements and X-ray radiation production, both to be fielded on a pulsed-power-driven high-power microwave device known as the UNM MILO.

Our mentor, Dr. Salvador Portillo, expressed to us that our projects were the beginnings of extensive long-term studies and characterization of beam-plasma interactions and bremsstrahlung radiation production in a device that would operate in the 100's kilovolt and kiloampere ranges. We both understood that the projects we were undertaking were essential to the start of a fully functioning beam physics laboratory experiment.

….the conference really allowed us to see the path towards following our projects to fruition…

Indeed, our projects have the potential to become graduate level research endeavors based on the breadth of our study. What we did not understand at the time was how much knowledge would be needed to truly understand and speak to the details of the device in question and the diagnostics we were developing. These projects took our greatest efforts.

We came to realize that the 2013 IEEE Nuclear and Plasma Sciences Society's International Conference on Pulsed Power and Plasma Science (PPPS-2013) was to be attended primarily by graduate students and research scientists at the forefront of their respective fields. In addition, we discovered at the beginning of the conference that we were in fact the only two undergraduate presenters at the entire conference. As you can imagine, upon learning this, our determination was a bit shaken by the growing pressure of expectation from our superiors, our colleagues, scientists attending the conference, and most of all, from ourselves. We needed to show up to this conference and make sure we were taken seriously as future scientists.

The presentations that we observed were impressive. They gave us a sense of the type of work we would be doing soon as we enter graduate study and as we continue with the work we were performing in the laboratory. In a sense, the conference really allowed us to see the path towards following our projects to fruition worthy of a graduate degree. The projects being presented resembled much of the work that we were completing on our respective topics, and this fueled our determination to give strong presentations of the complex problems we had been working to solve.

Listening to presentations, asking questions of researchers, and interacting personally with scientists of all ages, backgrounds, nationalities, and interests not only helped to promote our deep interests in science and engineering, but it also fostered a powerful inspiration for our presentations, our education, and beyond. Once we came to realize the opportunity we had before us, to communicate with and to learn from these conference participants, we began to take full advantage of our time spent at posters, listening to oral presentations, and participating in social events during the conference.

As our focus became more centered on taking advantage of the scientifically rich setting, our confidence in our research projects and the corresponding poster presentations we had yet to give was bolstered. We came to realize that performing experimental engineering physics and fielding fully functioning diagnostics is very complex and difficult, but that the process by which projects in this field are completed is common between scientists from all branches of pulsed power and plasma science. To perform high level science, one needs to put in high level work for long periods of time and continue through the many small failures that occur on the road to explaining complex physical processes.

We presented what we worked on with confidence and enthusiasm. We answered questions thoroughly and we even contemplated future research relating to our projects from fresh perspectives. By showing how our research efforts developed and the finished product of a semester of research into diagnostics, we even made acquaintances with researchers who could one day become our mentors and graduate advisors. These connections are valuable and were made possible by our detailed examination of the problems before us.

The conference experience clearly has its benefits for all who attend, observe, and present whether they come from academia, national laboratories, industry or otherwise. But we feel that, during the time we spent soaking up knowledge, asking questions, receiving answers, finding new questions to ask, and meeting new scientists, we discovered how much an IEEE Nuclear and Plasma Sciences Society's conference can truly benefit an undergraduate researcher.

PULSED-POWER AND PLASMA SCIENCES CONFERENCE

Peter Stoltz
ICOPC ExCom Member

Researchers and scientists from around the world attended the 40th IEEE International Conference on Plasma Science and the 19th IEEE Pulsed-Power Conference, held jointly for the third time as the IEEE Pulsed-Power and Plasma Science conference. The conference took place June 16th–21st, 2013 at the Hyatt Regency Embarcadero hotel in San Francisco, CA. The conference had 974 total registrants, with 43 countries represented (China, Japan, Germany, Russia, and the UK had the largest participation of the international community, making up roughly 30% of conference attendees among them).

Tom Melhorn
ICOPC ExCom Member

Conference organizers drew from 1096 abstracts submitted to create the technical program. Highlights of the technical program included presentations by three IEEE award winners in pulsed power and plasma science: Prof. Richard Temkin, winner of the 2013 Plasma Science and Applications Award; Dr. Ian McNab, winner of the 2013 Marx Award; and Dr. Scott MacGregor, winner of the 2013 Haas Award. Other notable sessions from the technical program included four memorial sessions for recently deceased long-time members of the pulsed power and plasma science community: Prof. Charles Birdsall, Dr. Dillon McDaniel, Dr. Igor Alexeff, and Dr. Ihor Vitkovitsky.

Submitted by Peter Stoltz, Tech-X Corp, pstoltz@txcorp.com, and Tom Melhorn, Naval Research Lab, tom.mehlhorn@nrl.navy.gov, on behalf of the IEEE NPSS Plasma Science and Applications Technical Committee.

THIRD INTERNATIONAL CONFERENCE ON ADVANCEMENTS IN NUCLEAR INSTRUMENTATION MEASUREMENT METHODS AND THEIR APPLICATIONS – ANIMMA 2013

June 2013, Marseilles, France

After the second International Conference on Advancements in Nuclear Instrumentation Measurement Methods and their Applications, held in June 2011 in Ghent, Belgium, ANIMMA returned to Marseilles, France, where the first of this conference series was held in June 2009. This year, Marseilles was designated as the European Capital of Culture by the European Union (the other European Capital of Culture 2013 is Košice, Slovakia).

The concept of this biennial conference is to bring together scientists and engineers working in many fields, such as nuclear reactor technology, fuel cycle, radioactive waste management, instrumentation and measurement in harsh media, but also fusion technology, fundamental physics, homeland security, medical applications and education.

The coherent concept of the conference was again impressively documented by the number of participants, which this year exceeded 450, an increase of about 50% as compared to the previous meeting. There was, among other organizations, strong support by CEA, the French Commissariat à l'Énergie Atomique et aux Énergies Alternatives and SCE•CEN, the Belgian StudieCentrum voor Kernenergie/Centre d'Étude de l'Énergie Nucléaire. Providers of nuclear measuring equipment presented their products at the industrial exhibition right in the center of the conference venue, the Palais des Congrès in Marseilles, and also Aix-Marseille University was present as co-organizer with a booth, as well as their instrumentation department (Filière Instrumentation).

From the beginning of the ANIMMA series, the IEEE Nuclear and Plasma Sciences Society, represented by Patrick Le Dû, has technically cosponsored the conference. Both the editor of the conference proceedings, Dora Merelli, and the Guest Editor of the *IEEE Transactions on Nuclear Science*, Christoph Ilgner, were present throughout the conference to help the authors with their submissions. The conference proceedings will be available on IEEE Xplore® early next year. Also NPSS membership development had a stand at the conference, where Jean-Luc Leray presented our society to the conference attendees, especially the students that attended the meeting for the first time in their career; he enrolled a number of new members.

The coherent concept of the conference was again impressively documented by the number of participants, which this year exceeded 450, an increase of about 50% as compared to the previous meeting.

Although many of the submissions came from France, there were also a significant number of papers originating from other European countries, as well as from the Americas and the Asia-Pacific region, making ANIMMA 2013 a really international conference with nearly 300 scientific contributions from over 39 worldwide countries.

CONFERENCE REPORTS Continued on **PAGE 14**

Technical Committees Continued from **PAGE 11**

RADIATION INSTRUMENTATION

There are a number of important activities currently taking place within the RITC community. The biennial Advancements in Nuclear Instrumentation Measurement Methods and their Applications conference (ANIMMA 2013, Marseilles, France, General Chair: Abdallah Lyoussi) was very successful with a significant attendance increase and excellent scientific content. The proceedings from the conference are anticipated to be available in October, along with a special conference edition of the *IEEE Transactions on Nuclear Science* (TNS). Planning for the next conference to take place in 2015 has begun with open consideration of potential locations.

We are now looking forward to the 2013 Nuclear Science Symposium and Medical Imaging Conference (2013 NSS/MIC, nss-mic.org/2013) that will take place in Seoul, South Korea from 27th October to 2nd November at the COEX Convention Center. As this is the first Asian venue for this conference, the committee is working hard to offer an outstanding program to make this a unique and memorable event. We certainly hope to see you in Seoul.

In addition to the conference activities, there are two elections within our community. The first is the annual election of five representatives to the Radiation Instrumentation Steering Committee (RISC). The second election is to select the Radiation Instrumentation Technical Committee Representative (one of two seats) on the NPSS AdCom. We have an excellent set of candidates for both elections, so please watch for your ballots, and do not forget to vote.

Tony Lavietes
RISC Chair

Upcoming NSS/MIC Conferences

2013: 27th Oct–2nd Nov
Seoul, South Korea
Hee-Joung Kim, General Chair
Gyuseong Cho, NSS Program Chair

2014: 10th Nov–15th Nov
Seattle, Washington
Tony Lavietes, General Chair
Ingrid-Maria Gregor, NSS Program Chair

2015: 1st Nov–7th Nov
San Diego, California
Vesna Sossi, General Chair
John Valentine, NSS Program Chair

2016: 29th Oct–5th Nov
Strasbourg, France
Maxim Titov, General Chair

RITC Constitution and Bylaws

The revised C&BL are the result of the required five-year review and revision of the RITC Constitution and Bylaws. As required, this newly revised version is provided in its entirety, with highlighted changes, on the IEEE website, at ewh.ieee.org/soc/nps/tc-ritc-constitution.pdf, for review before being put into force. Any objections to the Constitution and Bylaws must be submitted in writing to Brad Roscoe, RISC Secretary (roscoe@slb.com) within ninety day of the mailing date of this notice.

Excerpted here are the highlighted changes:

RADIATION INSTRUMENTATION TECHNICAL COMMITTEE CONSTITUTION AND BYLAWS

RITC CONSTITUTION

ARTICLE I - NAME AND OBJECTIVE

Section 3.

The RITC shall aid in promoting close cooperation and exchange of technical information among its members and to this end, is responsible (in conjunction with the NMISTC) for the annual NSS/MIC meetings ~~shall hold meetings for the presentation and discussion of original contributions~~, shall assist in the publication of the *Transactions on Nuclear Science*, provide for peer recognition of individuals, promote a positive image of ionizing radiation instrumentation science and applications, act as liaison between IEEE and other organizations in the area of radiation instrumentation, and otherwise provide for the needs of its members.

ARTICLE IV - ADMINISTRATION

Section 4.

a) The Vice-Chairperson, who is Chairperson-elect, shall be elected by the voting members of the RISC from among the eligible members of the RISC. The term of office shall be ~~three~~ two years as Vice-Chairperson, followed by ~~three~~ two years as Chairperson, followed by ~~three~~ two years as the Most Recent Past Chairperson. The election of Vice-Chairperson shall be held as defined in the Bylaws.

ARTICLE VIII - REVISION

Section 1.

The Chairperson of the RISC shall appoint a ~~seven-person~~ Subcommittee ~~no later than January 1, 2000, and~~ every five years ~~thereafter~~ to evaluate the effectiveness of ~~this~~ the Constitution and Bylaws, to study the rules of governance required by the activities of the RITC at that time, and to consider revising the Constitution and Bylaws appropriate to the existing and anticipated needs of the RITC.

RITC BYLAWS

1. RISC

Article IV of the Constitution provides that the RISC shall consist of a number of elected members-at-large plus certain ex-officio members. The ex-officio members of the RISC shall be (unless they are already elected members-at-large) the Chairperson of RISC, the Vice-Chairperson of RISC, the Most Recent Past Chairperson of RISC, the RITC-elected NPSS AdCom members, the Chairperson of each RISC Subcommittee, the Chairperson of the Nuclear Medical and Imaging Sciences Council, the Editor of the IEEE *Transactions on Nuclear Science*, the Conference Editor for the Nuclear Science Symposium, and such other ex-officio members as are provided for in the Constitution and Bylaws of the NPSS.

1.1 The voting members of the RISC shall be the elected RISC members-at-large, the Chairperson of RISC, the Vice-Chairperson of RISC, and the Most Recent Past Chairperson of RISC, and the RITC-elected NPSS AdCom members.

Tony Lavietes, Chair of the Radiation Instrumentation Steering Committee, can be reached by email at a.lavietes@gmail.com

Conference Reports Continued from **PAGE 13**

The papers were presented in the traditional oral or poster form, the latter complemented by a "mini-oral" presentation, where poster authors could briefly outline their main contents. After the session, the audience moved over to the poster area for in-depth discussions. This way the conference organizers made sure the posters received the attention they deserve.

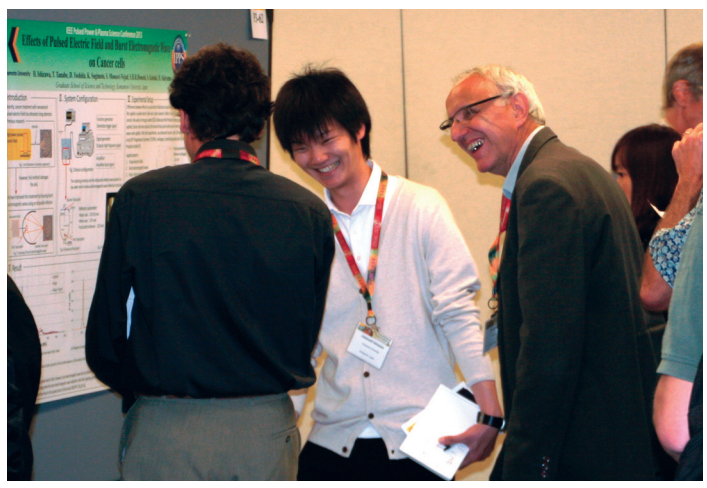
Albeit the conference covered a broad area of subjects, lessons learned from the accident at the Fukushima Daiichi nuclear power plant received a lot of attention. The need for an increase in R&D activities on reactor instrumentation was especially emphasized more than once by the plenary speakers in their invited talks.

The very successful ANIMMA 2013 conference was framed by short courses in radiation physics and instrumentation and a workshop on nuclear heating in the beginning, and ended with a visit to the Cadarache site, where the ITER facility is being developed.

The next ANIMMA will be held in May or June 2015 in Lisbon, Portugal.

Christoph Ilgner, IEEE-TNS Guest Editor for ANIMMA 2013, can be reached at Helmholtz-Zentrum Dresden-Rossendorf, Institute of Radiation Physics; E-mail christoph.ilgner@cern.ch.

POSTER SESSIONS AT 2013 SOFE AND PPPS CONFERENCES



In-Vivo PET Monitoring in Proton Therapy

The superior dose conformity to the tumor achievable with proton therapy with respect to conventional radiotherapy is today a widely demonstrated fact, but still not sufficiently matured and, most importantly, not completely exploited.

Because of the lack of consolidated quality assurance techniques, proton therapy does require an extremely high degree of confidence in the treatment plan. [Grassberger11]. Sources of uncertainty include the incompleteness of physical models, the biological effects, and the overall precision of the treatment planning tools. At the state of the art, we can expect range uncertainties exceeding 3 mm, except in some cases, where the uncertainty might be bigger such as lung or deep-seated treatments [Paganetti12].

Uncertainties could be better understood, and maybe corrected for, if in-vivo range verification is done with high precision. Thus, tools for in-vivo confirmation of beam delivery and, in particular, of the proton range in patient would be highly beneficial. The most promising in-vivo dose monitoring methods are prompt gamma detection and positron emission tomography (PET). Due to a higher detectors acceptance and efficiency PET appears to be able to perform better with respect to prompt gamma detection [Moteabbed11]. The PET technique takes advantage of the radioisotopes produced by nuclear interaction of the proton beam within tissue, mainly ^{15}O (2 minutes half-life) and ^{11}C (20 minutes half-life).

Research work in PET technology is currently focusing on the optimization of the patient workflow and of the trade-off between monitoring time, image quality and installation cost. As of today the three main modalities under investigation are the so-called *off-line*, *in-room* and *in-beam* monitoring, depending upon the time when the PET exam is performed: a relatively long time after the irradiation (*off-line*), shortly after in the same treatment room (*on-line*), or even in the same treatment bed during the pauses between irradiation spills (*in-beam*) [Shakirin11].

In-beam PET monitoring would be the ideal solution, but has some limitations. On the one hand, it imposes stricter geometrical constraints on the PET detector due to the necessity of leaving one or more portal entrances available for the proton beam line. This limits the tomographic angular coverage and thus could introduce severe imaging artifacts [Crespo06]. On the other hand, it is impossible to acquire data during the whole time of irradiation with the commercially available PET systems. This is due to the very high counting capability that is needed for the acquisition system so as to discriminate clean 2-γ coincidences from the prompt radiation background produced by the proton beam [Parodi05]. This situation makes the in-beam PET monitoring feasible only for a reduced number of proton therapy facilities.

This has been the main motivation for the development of modularized in-beam PET detectors with reduced acquisition dead-time [Sportelli11]. The availability of PET instrumentation able to acquire data during the full irradiation time would enable a fourth acquisition modality, which we refer to as full in-beam, or in short "*full-beam PET monitoring*." This modality would provide the highest counting statistics, because of the improved detection of fast-decaying ^{15}O positron emitters. Furthermore, it would provide the quickest information for early monitoring feedback, also free of biological washout.

Based on previous experiences with the first dedicated in-beam PET system [Vecchio09], at the University of Pisa we are developing new acquisition technologies for dedicated, full-beam PET. Full beam acquisition has already been shown possible on PMMA phantoms [Sportelli12, Rosso13]: a PET 10 cm x 10 cm two-head system was used on proton beams at the Italian CATANA (INFN-LNS, Catania, Italy) and CNAO (Pavia, Italy) hadron therapy facilities.

Passively collimated proton beams of 36-mm diameter and 62 MeV initial energy were delivered at the cyclotron facility CATANA impinging onto a PMMA target [Cirrone04]. Various doses were used up to 30 Gy. With the two heads at a distance of 14 cm, the geometrical efficiency was ~20% at the center. Time coincidence resolution was set to 2.6 ns.

An example of count rates seen during and after the irradiation at CATANA is shown in Figure 2 (top) for a total dose of 30 Gy in 170 s. In these conditions, during the irradiation, the random counts are 12% of the total acquired data, which is well below typical random to coincidence ratios. Figure 2 (bottom) shows the rates for a lower dose rate of 10 Gy in 170 s. In this case, the random rates account for up to 3% of the total acquired coincidences.

Similar setups have been used at CNAO on actively collimated (raster scan) proton beams with initial energies from 93 to 112 MeV and doses up to 20 Gy. Figure 3 summarizes the accuracy of our PET prototype concerning the position of the 50% fall-off-activity profile for monoenergetic protons in PMMA. A good agreement between data and simulation is seen. In either case, in cyclotron- or synchrotron-based facilities, it is possible to acquire valid data for activity range verification from the beginning of the irradiation. Acquired data demonstrated that activity-range verification from full beam data can be done with a precision in the order of 1 mm. This is about half the pixel size of the scintillator matrix, which is 2.0 mm.

Full-beam acquisitions are still noisier than in-beam or in-room modalities, due to the higher random coincidence rates. Random correction is more complex with synchrotrons, where the time-microstructure of particle beams may alter the estimations obtained with the delayed window technique [Parodi05]. Also the impact of multiple coincidences might be higher than in conventional PET. Further work is required to fully understand and correct these sources of noise.

Another important aspect is that current feasibility studies must be validated on patients. Phantom studies have been carried out in worst-case scenarios from the point of view of dead time and random coincidence noise, mainly by using close detectors and very high dose rates. However, other degrading effects may occur with detectors separated by more than 50 cm, as required for patients. Noncolinearity effects are in the order of 1 mm for such distances and the number of detector channels must be at least doubled in order to keep comparable geometrical efficiencies as in preliminary studies.

—V. Rosso, G. Sportelli, IEEE Member
A. Del Guerra, IEEE Fellow
Department of Physics
University of Pisa and INFN, Pisa, Italy

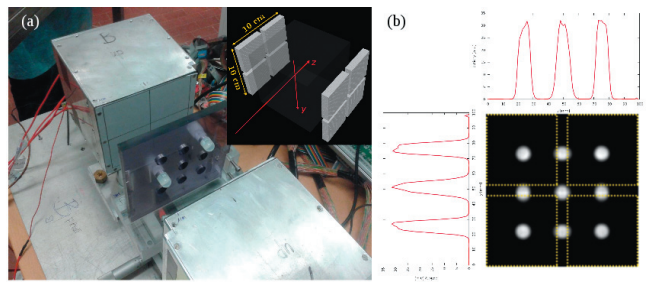


Fig 1: Photograph of the PET system during a calibration acquisition [Rosso13]

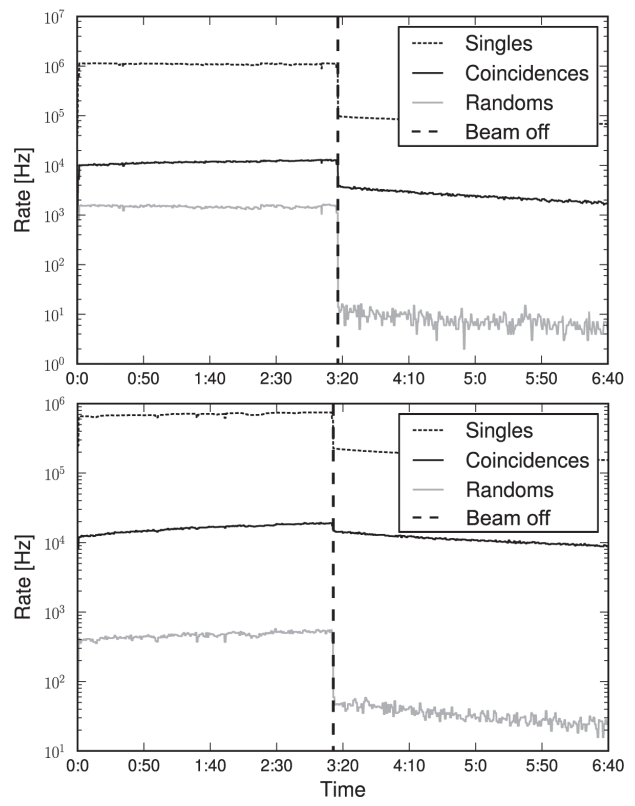


Fig 2. True and random coincidence rates during and after the irradiation for two PET acquisitions at CATANA. Top: Dose rate 30 Gy in 170 s; Bottom: Dose rate 10 Gy in 170 s [Sportelli12]

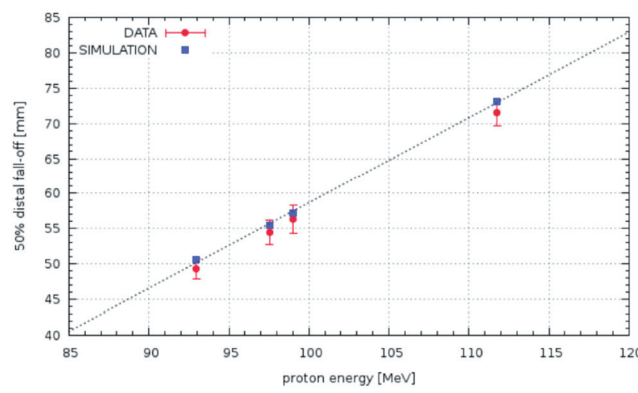


Fig 3. Comparison of the position of the 50% fall-off between Monte Carlo simulation and data for different energies. The error bar represents the standard deviation value of the fit [Rosso13].

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Secretary's Report Continued from **PAGE 9**

attendance as was the PSPB chair. There will be a WIE conference in San Francisco in 2014. Over 70% of WIE members are students. NSREC had a WIE breakfast and the speaker was the plenary speaker for the closing session. It was a very successful event.

Ron Jaszczak, one of our TMI liaisons, reported that they have had only two candidates for the Editor-in-Chief position. The letter of agreement among the societies sponsoring TMI has not changed and this is in the hands of the presidents of these four societies.

ADCOM ACTIONS

◥ It was moved and passed unanimously to accept changes in the CANPS award description to read: To recognize individuals who have made an outstanding achievement in the application of data processing and computers in nuclear and plasma sciences. The judging basis was also changed to include this change.

◥ IEEE NPSS High School Teacher Initiative: Motion from the Particle Accelerator Science and Technology Committee: AdCom to approve up to $5,000/event for support of a Teacher's Day event held at the next five PAST TC Conferences (IPAC and NA-PAC held in North America) which are cosponsored by IEEE. Passed unanimously.

◥ Motion from the Radiation Instrumentation Steering Committee: It was moved and passed unanimously that the NPSS will provide full IEEE Sponsorship of the SCINT 2015 Conference under the auspices of the Radiation Instrumentation Technical Committee. The last SCINT held in the U.S. was also fully sponsored by NPSS.

◥ It was moved by the Communications Committee and passed unanimously that AdCom approves the expenditure of up to $30,000 for redesign and implementation of the Society web pages.

◥ It was moved by the CSI liaison, seconded and passed, that AdCom, under the IEEE NPSS Haiti Solar Power Initiative, fund retrofit of 1000 defective portable battery kits at maximum cost of $15,000.

OTHER BUSINESS

A matter that arose in large part because of the large number of papers withdrawn from the PPPS conference was that of real-time conference program management. Possibilities include mobile apps for tablets and smart phones, no printed conference program, and an option for 'just in time' program printing for those who want a printed program. What is needed is a live link to a SQL data base that allows update push.

A second issue was a proposal to consider additional NPSS scholarship or fellowship programs. This ties into the Finance Committee's request for new initiatives. Look for more about this in the next newsletter.

Albe Larsen, IEEE NPSS Secretary and Newsletter editor, can be reached at the SLAC National Accelerator Laboratory MS-64, 2575 Sand Hill Road, Menlo Park, CA 94025; Phone +1 650 926-2748; email: amlarsen@slac.stanford.edu.

Functional Committees Continued from **PAGE 12**

to the noble generosity and magnanimous spirit of our Fellow Evaluation Committee. This year's members were Prof. Paul Chu from the City University of Hong Kong, Prof. Jeff Fessler from the University of Michigan, Dr. Erik Heijne from CERN, Dr. Richard Kouzes from the Pacific Northwest National Laboratory, Dr. Jean Luc Leray from CEA, Dr. Ned Sauthoff, the Director of the U.S. ITER Project Office, located at Oak Ridge National Laboratory, Dr. James Schwank from Sandia National Laboratories and Dr. Stan Schriber, retired from Los Alamos National Laboratory and has an affiliation with Michigan State University and seems (to me) to be leading an adventurous and fun-filled semi-retirement! We all owe a debt of gratitude to this committee for their hard work with special thanks from me for making this important endeavor such a pleasure!

Nominations for the IEEE Fellows Class of 2015 are now being accepted. Nominate a colleague, co-worker, or friend whose career and body of work you consider eligible for elevation to the IEEE Fellow Grade. The Fellow Nomination Process can only begin with a nominator and strict adherence to the Fellow nomination instructions is essential; otherwise, a nominee may be placed at a serious disadvantage or even disqualified from consideration. Tips for preparing nominations may be found at ieee.org/membership_services/membership/fellows/. The deadline for nominations to the Fellow Class of 2015 is March 1st, 2014.

Jane Lehr, Professor and Chair, Electrical and Computer Engineering, University of New Mexico, can be reached by email at Jane@ECE.UNM.edu.

LET US SPRAY

Fanaticism is described as redoubling your effort when you have forgotten your aim.

—George Santayana

MUM'S THE WORD

The more you are talked about the less powerful you are.

—Benjamin Disraeli

AT LEAST IT'S EXERCISE

When you get to my age, life seems little more than one long march to and from the lavatory.

—John Mortimer

DOESN'T WORK THAT WAY

Men are not hanged for stealing horses, but that horses may not be stolen.

—George Savile

ERRATA: The correct e-mail address for Jerry Kiuttu is gerald.kiuttu@varitech-services.com.

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CONTRIBUTED ARTICLES

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 October 5, 2013 for publication in the December 2013 Newsletter.

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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