# Radiation Safety Information Computational Center

No. 585                                                                                February  2014

*Wisdom is knowing when to speak your mind and when to mind your speech. --*

*Evangel*

## MESSAGE FROM THE DIRECTOR

In January RSICC had the pleasure of hosting Cristina Lebunetelle from the Data Bank of the Nuclear Energy Agency (NEA) of the Organization for Economic Cooperation and Development (OECD) as a part of the general agreement between the OECD-NEA and the Department of Energy's Office of Nuclear Energy (DOE-NE). For decades, RSICC and the NEA Data Bank have had agreements to exchange codes, data, and benchmark evaluations as well as cooperating in the management and distribution of the Shielding Integral Benchmark Archive and Database (SINBAD). Cristina's visit provided a unique opportunity for each organization to learn from each other's best practices and to further strengthen the level of cooperation between the two organizations. Such engagements should enhance the effectiveness of our operations and ultimately lead to improved service for all of our customers. RSICC is committed to work with our international counterparts to ensure that the broader nuclear industry has the best tools available to them, and our relationship with the NEA Data Bank is critical to this endeavor.

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Left to right: Mark Baird, Teresa Moore, Director Timothy Valentine, Cristina Lebunetelle, Barbara Snow, and Marsha Henley.

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# CHANGE TO THE RSICC CODE AND DATA COLLECTION

The following package has been added to the RSICC catalog for those individuals that may be interested.

## CCC-807/ SCEPTRE 1.1

Sandia National Laboratories, Albuquerque, New Mexico has contributed SCEPTRE 1.1 to RSICC. The SCEPTRE code solves the linear Boltzmann transport equation for one-, two- and three-dimensional geometries. SCEPTRE is capable of handling any particle type for which multigroup-Legendre cross sections are available. However, the code is designed primarily to model the transport of photons, electrons, and positrons through matter. For efficiency and flexibility, SCEPTRE contains capability for both the first- and second-order forms of the Boltzmann transport equation.

The SCEPTRE code uses an unstructured-mesh finite-elements spatial approximation, and a multigroup-Legendre, discrete-ordinates energy/angular approximation. Parallel solution is available for a spatially-decomposed mesh using MPI. For second-order transport methods, a spherical harmonics angular treatment is also available. For the first-order form of the transport equation, the within-group solves are performed with parallel sweeps and source iteration. For the second-order forms, an SPD linear system is formed and the space/angle dependence is solved simultaneously with a Trilinos parallel preconditioned CG solver. A different solution method can be specified for each energy group.

Included in the package are the referenced document and source transmitted on CD ROM in tar format. C++, Linux (C00807PCX8600).

## Attention SCALE 6.1 Patch 2 Users on Linux Systems:

The SCALE 6.1.3 update is available for SCALE 6.1 users. This comprehensive update includes enhancements previously released as SCALE 6.1.1 and SCALE 6.1.2. In addition to the functionality improvements provided in 6.1.1 and 6.1.2, the SCALE 6.1.3 update provides compatibility with additional Linux operating systems, but provides no additional updates in functionality. This update is recommended for all users of SCALE 6.1 and 6.1.1 and for Linux users of 6.1.2.

Segmentation Fault on some Linux Kernels:

SCALE 6.1, 6.1.1, and 6.1.2 were created and tested on RHEL4 Linux to provide backwards compatibility with older Linux operating systems. Users of newer Linux kernels have reported problems executing SCALE, with all modules stopping on a segmentation fault. Although ORNL only has a few variants of Linux for testing, the error is believed to occur on Ubuntu 11, 12, 13; Fedora 16, 17, 18; RHEL6; and CentOS 6.4.

The issue is caused by changes in how Linux handles system calls that report environment information used to populate the SCALE QA table.

SCALE 6.1.3 provides revised methods to access this information and the compiled binary executable files for 64-bit Linux systems are compatible with many more operating systems. No further enhancements to SCALE are provided with this update, so previously computed results will not vary beyond normal statistical deviations observed when updating compilers and/or operating systems.

Mac and Windows users are not affected by this update, so the Mac, Windows and 32-bit Linux executable files in SCALE 6.1.3 are the same as those distributed with SCALE 6.1.2.

If you have already received C785MNYCP00/01 and would like to request the 6.1.3 Patch, please contact scalehelp@ornl.gov and please include "SCALE 6.1.3 patch request" in the subject line of your email.

# SCIENCE EDUCATION PROGRAMS AT
# OAK RIDGE NATIONAL LABORATORY

Looking for an internship or post-graduate opportunity at Oak Ridge National Laboratory? The Science Education Programs at Oak Ridge National Laboratory provide paid opportunities for undergraduates, grad students, recent graduates, and faculty to participate in high-quality research alongside world-class scientists to solve real-world problems. Opportunities are available for internships and co-ops, research appointments, and sabbaticals.

You can access all available opportunities through the website at http://www.orau.org/ornl. The Talent and Opportunity System allows you to create a profile, and then answer only 5 or 6 questions for each program or job posting for which you apply.

All levels of participants from undergraduates to faculty are encouraged to publish research papers with their mentors. Please browse through the Research Profiles on the different participants and their research experiences at the right hand side of the bottom of the web site listed above. Also, there is a video of research participants at ORNL sharing their thoughts on how access to world-class research facilities and staff has catapulted their careers in science and technology. You can find it on YouTube at http://ow.ly/2EQLz.

# CONFERENCES, TRAINING COURSES,
# SYMPOSIA

RSICC attempts to keep its customers and contributors advised of conferences, courses, and symposia in the field of radiation protection, transport, and shielding through this section of the newsletter. Should you be involved in the planning/organization of such events, feel free to send your announcements and calls for papers via email walkersy@ornl.gov with "conferences" in the subject line by the 20th of each month. Please include the announcement in its native format as an attachment to the message. Please provide a website address for the event if one is available.

Every attempt is made to ensure that the links provided in the Conference and Calendar sections of this newsletter are correct; however, if the links become unavailable, please call the point of contact for the event.

# CONFERENCES



# 10<sup>th</sup> International Conference of Computational Methods in Sciences and Engineering

The 10th International Conference of Computational Methods in Sciences and Engineering will be held April 4-7, 2014 at the Metropolitan Hotel, Athens, Greece. The conference will feature a mini-symposium on energy, with emphasis on nuclear energy entitled: "Accelerate Discovery and Design of New Materials Applications in Nuclear Power by High Performance Supercomputing."

For up-to-date information about this conference, visit their website at http://www.iccmse.org/.



# 3<sup>rd</sup> International Conference on Physics and Technology of Reactors and Applications

The 3rd edition of the conference PHYTRA will be held May 12-14, 2014 in Tetouan, Morocco. PHYTRA3 is expected to be an outstanding international event in the MENA region which provides an opportunity for researchers, academicians and practitioners in the field of physics and technology of reactors to gather, exchange ideas, and present original research contributions and best practices.

For up-to-date information about this conference, visit their website at
http://www.gmtr-association.com/phytra3/.



# 41<sup>st</sup> IEEE International Conference on Plasma Science (ICOPS) and the 20<sup>th</sup> International Conference on High Power Particle Beams (BEAMS)

The 41st IEEE International Conference on Plasma Science (ICOPS) and the 2th International Conference on High Power Particle Beams (BEAMS) will be held May 25-29, 2014 at the Marriot Wardman Park, Washington, DC. This joint meeting will cover a range of scientific material in the fields of both plasma science and high power particle beams. In addition to the material traditionally covered in these

conferences, two mini-courses will also be offered, on the topics of Low Temperature Atmospheric Pressure Plasmas and Atomic and Radiation Physics.

For update-to-date information about his conference, visit their website at http://www.ece.unm.edu/icops-beams2014/.



## 9th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications

The International Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications (IRRMA) will be held July 6-11, 2014 at the Universidad Politécnica de Valencia, Valencia, Spain. This triennial event is organized with the purpose of bringing together scientists and engineers from around the world who share an interest in radiation and radioisotope measurement applications.

For update-to-date information about his conference, visit their website at
 http://irrma-9.webs.upv.es/index.html.



## 2014 IEEE Nuclear and Space Radiation Effects Conference

The 2014 IEEE Nuclear and Space Radiation Effects Conference will be July 14 to 18 at the Marriott Rive Gauche, Paris, France. The conference features a technical program consisting of eight to ten technical sessions of contributed papers describing the latest observations in radiation effects, a Short Course on radiation effects offered on July 14, a Radiation Effects Data Workshop, and an Industrial Exhibit.

For update-to-date information about his conference, visit their website at http://www.nsrec.com/.

# 19<sup>th</sup> Pacific Basin Nuclear Conference

The 19th Pacific Basin Nuclear Conference will be held August 24-28, 2014 at the Hyatt Regency Hotel, Vancouver, British Columbia, Canada. The conference will showcase the advancement of nuclear technology in power generation, health science, and environmental stewardship.  Challenges facing

nuclear technology will be discussed as well as future development.   The conference features ten Technical Tracks, covering all aspects of nuclear technology.

For up-to-date information about this conference, visit their website at www.pbnc2014.org.



# 18<sup>th</sup> Topical Meeting of the ANS Radiation Protection & Shielding Division

The 18th Topical Meeting of the Radiation Protection & Shielding Division of ANS will be held September 14-18, 2014 at the Hilton Downtown, Knoxville, Tennessee USA.  The conference explores the scientific, technological and engineering issues associated with particle and ionizing radiation shielding in its broadest context, including nuclear energy systems, accelerator facilities, space and other radiation environments.

For up-to-date information about this conference and the Call for Papers, visit their website at www.rpsd2014.org .

## PHYSOR 2014 International Conference

The ANS Reactor Physics Topical Meeting will be held at The Westin Miyako, Kyoto, Japan September 28 – October 3, 2014. The technical program will include timely and relevant special topics. Students will be actively involved in all technical events and activities. Exciting workshops and technical tours will be also offered.

For up-to-date information about this conference, visit their website at http://physor2014.org/#.



## SATIF-12

The 12th Meeting of the Task Force on Shielding Aspects of Accelerators, Targets and Irradiation Facilities (SATIF-12) will be held at Fermilab on April 28-30, 2014. The main objectives of the SATIF meetings are to promote the exchange of information among experts in the field of accelerator shielding and related topics, identify areas where international cooperation can be fruitful, and carry on a program of work to achieve progress in specific priority areas.

For up-to-date information about this conference, visit their website at
https://indico.fnal.gov/conferenceDisplay.py?ovw=True&confId=7469.

## TRAINING COURSES



## LANL MCNP6 Class Schedule

| Date | Course Name and Description | Location | Cost |
|------|---------------------------|----------|------|
| February 24-28, 2014 | Introduction to MCNP6<br>Non-US citizens must register 2013-12-23<br>Min 8 students – Max 15<br>Mon 12:30 – Fri 12:00 | Los Alamos, NM | $1,900 or $1,600* |
| March 17-21, | Criticality Calculations with MCNP6<br>Non-US citizens must register 2014-01-13 | Los Alamos, NM | $1,900 or $1,600* |

| | | | |
|---|---|---|---|
| 2014 | Min 8 students – Max 15<br>Mon 12:30 – Fri 12:00 | | |
| April 28 – May 2, 2014 | Introduction to MCNP6<br>Non-US citizens must register 2014-02-24<br>Min 8 students – Max 15<br>Mon 12:30 – Fri 12:00 | Los Alamos, NM | $1,900 or $1,600* |
| June 2-6, 2014 | Introduction to MCNP6<br>Non-US citizens must register 2014-03-31<br>Min 8 students – Max 15<br>Mon 12:30 – Fri 12:00 | Los Alamos, NM | $1,900 or $1,600* |
| August 4-8, 2014 | Criticality Calculations with MCNP6<br>Non-US citizens must register 2014-06-02<br>Min 8 students – Max 15<br>Mon 12:30 – Fri 12:00 | Los Alamos, NM | $1,900 or $1,600* |
| August 11-15, 2014 | Variance Reduction with MCNP6<br>Non-US citizens must register 2014-06-09<br>Min 8 students – Max 15<br>Mon 12:30 – Fri 12:00 | Los Alamos, NM | $1,900 or $1,600* |
| August 18-22, 2014 | Introduction to MCNP6<br>Non-US citizens must register 2014-06-16<br>Min 8 students – Max 15<br>Mon 12:30 – Fri 12:00 | Los Alamos, NM | $1,900 or $1,600* |
| October 20-24, 2014 | Introduction to MCNP6<br>Non-US citizens must register 2014-08-18<br>Min 8 students – Max 15<br>Mon 12:30 – Fri 12:00 | Los Alamos, NM | $1,900 or $1,600* |

**\*Early payment discount:**  A discount of $300 per student is given when the registration payment is received in full at least 4 weeks prior to the start of class.

**Introductory classes** are for those who have little or no experience with MCNP.  This class surveys the features of MCNP so the beginning user will be introduced to the capabilities of the program, and will have hands-on experience at running the code to solve simple problems.  Course topics include Basic Geometry, Source Definitions, Output (Tallies), Advanced Geometry (repeated structures specifications), Variance Reduction Techniques, Statistical Analysis, Criticality, Plotting of Geometry and Tallies, and Neutron / Photon / Electron Physics.

**Intermediate workshops** cover the entire spectrum of MCNP/MCNPX, but proceed at a much faster pace and are more in-depth than the introductory classes.  These workshops are open to new users; the first day of class is a review of basics.  However, the intermediate workshops are targeted toward more experienced users and are more problem solving than lecture classes.  Intermediate workshops feature flexible course content, skip topics of least interest to the participants, and provide significantly more depth than introductory classes.

**Advanced classes- Variance Reduction and Criticality** are for people with MCNP experience who want to extend their knowledge and gain depth of understanding.  Most areas of MCNP operation will be discussed in detail, with emphasis on Advanced Geometry, Advanced Variance Reduction Techniques, and other advanced features of the program.  Time will be available to discuss approaches to specific problems of interest to participants.  Classes on specific topics are offered when there is sufficient interest.

Note:  While MCNP supports a number of platforms, LANL class computers are Windows based.

More information about the MCNP courses at LANL is available on their website at
https://laws.lanl.gov/vhosts/mcnp.lanl.gov/classes/classinformation.shtml.

## MCNP6, Penelope, and Visual Editor Training

Classes are taught using the most recent (beta) version of the Visual Editor Code. All class attendees must have a valid MCNP/MCNPX RSICC license. Bring proof of receipt (letter or email) to the class.

| Visual Editor Classes 2014 | | |
|---|---|---|
| February 10-14, 2014 | Beginning Visual MCNP | Rio de Janeiro, Brazil |
| February 17-21, 2014 | Intermediate Visual MCNP | Rio de Janeiro, Brazil |
| March 17-21, 2014 | Intermediate Visual MCNP | Barcelona, Spain |
| March 24-28, 2014 | Beginning Visual MCNP | Paris, France |
| April 14-18, 2014 | Beginning Visual MCNP | Las Vegas, NV |
| April 21-25, 2014 | Intermediate Visual MCNP | Las Vegas, NV |
| May 19-23, 2014 | Beginning Visual MCNP | Cebu, Philippines |
| May 26-30, 2014 | Intermediate Visual MCNP | Cebu, Philippines |
| June 16-20, 2014 | Beginning Visual MCNP | Barcelona, Spain |
| June 30-July 4, 2014 | Intermediate Visual MCNP | Barcelona, Spain |
| July 14-18, 2014 | Beginning Visual MCNP | Anaheim, CA |
| July 21-25, 2014 | Intermediate Visual MCNP | Anaheim, CA |
| August 11-15, 2014 | Beginning Visual MCNP | Orlando, FL |
| August 18-22, 2014 | Intermediate Visual MCNP | Orlando, FL |
| September 1-5, 2014 | Beginning Visual MCNP | Montreal, Canada |
| September 8-12, 2014 | Intermediate Visual MCNP | Montreal, Canada |
| September 22-26,2014 | Beginning Visual MCNP | Myrtle Beach, SC |
| September 29-October 3, 2014 | Intermediate Visual MCNP | Myrtle Beach, SC |
| October 13-17, 2014 | Beginning Visual MCNP | Barcelona, Spain |

| | | |
|---|---|---|
| October 20-14, 2014 | Intermediate Visual MCNP | Barcelona, Spain |
| December 1-5, 2014 | Beginning Visual MCNP | Vienna, Austria |
| December 8-12, 2014 | Intermediate Visual MCNP | Vienna, Austria |

The introductory workshops combine teaching on MCNP basics and how to create MCNP input files using the Visual Editor. The intermediate Visual Editor workshops focus on more advanced topics such as tallies and variance reduction using the Visual Editor.

Exercises will focus on creating input files and visualizing output data with the Visual Editor. Attendees are encouraged to bring their own input files for viewing and modifying in the Visual Editor; this is particularly important for the intermediate workshop.

The course description and registration information can be found at
http://www.mcnpvised.com/index.html.

| MCNP6 Workshops 2014 | | |
|---|---|---|
| March 31-<br>April 4, 2014 | MCNP6 Intermediate Workshop (The NEA handles registration for this class.) | Paris, France |
| May 5-9, 2014 | MCNP6 Intermediate Workshop | Livermore, CA |
| June 23-27, 2014 | MCNP6 Intermediate Workshop | Barcelona, Spain |
| August 25-29, 2014 | MCNP6 Intermediate Workshop | Washington, DC |
| October 27-31, 2014 | MCNP6 Intermediate Workshop | Barcelona, Spain |

MCNP6 experts from Los Alamos will lead in the teaching of these workshops on the capabilities of MCNP6.

Intermediate Workshops cover the entire spectrum of MCNP6 but proceed at a much faster pace and are more in-depth than Introductory Classes. These workshops are open to new users; the first day is a review of basics. However, the intermediate workshops are targeted toward more experienced users and are more problem solving than lecture classes. Intermediate workshops feature flexible course content, skip topics of least interest to the participants, and provide significantly more depth than introductory classes.

| Penelope Workshop 2014 | | |
|---|---|---|
| April 28-May 2, 2014 | Penelope | Las Vegas, NV |

The list of workshops is tentative, as workshops may be added, removed, or modified throughout the year, depending on user interests. Workshops with fewer than 12 registrants on the early registration date are subject to cancellation or rescheduling.

In order to process non-U.S. citizens by the class date, non-U.S. citizens must register at least 6 weeks prior to the start of the training class. All non-U.S. citizens who reside in countries listed in the U.S. Code

of Federal Regulations, Title 10, Part 810.8, are required to register at least 8 weeks prior to the start of the training class. These participants must be processed by the DOE and should not make travel arrangements until approval from DOE has been obtained.

Additional information about the courses can be found at the website, http://www.mcnpvised.com/train.html.

To register send an email to Randy Schwarz at randyschwarz@mcnpvised.com, indicating the workshop of interest to you.



## NEA Nuclear Energy Agency

Class sizes are limited and courses may be cancelled if minimum enrollment is not obtained one month prior to course. Course fees paid are refundable up to one month before each class.

Please note that all attendees must be registered users.

| Date | Class | Course Content | Price | Location |
|------|-------|----------------|-------|----------|
| 17-21 March 2014 | Training Course on Analytical Benchmarks: Case Studies in Neutron Transport Theory | To register, click here | - | Paris, France |
| 24-28, March 2014 | Introduction to MCNP/X using the Visual Editor | Course description To register, click here | 2000 Euros | Paris, France |
| 31 March – 4 April 2014 | MCNP6 intermediate | Course description To register, click here | 2000 Euros | Paris, France |
| 7-11 April 2014 | SCALE/TRITON Lattice Physics and Depletion | Course description To register, click here | 2000 Euros | Paris, France |
| 14-16 April 2014 | SCALE/ORIGEN Standalone Fuel Depletion, Activation, and Source Term Analysis | Course description To register, click here | 1500 Euros | Paris, France |

* The fee includes the training course, luncheons and coffee breaks.

**Contact: programs@oecd-nea.org**

## SCALE Training Courses – Spring 2014

All attendees MUST be licensed SCALE 6.1 users. SCALE 6.1 is available from ORNL/RSICC in the USA, the OECD/NEA Data Bank in France, and the RIST/NUCIS in Japan. All currently scheduled SCALE Courses are described below.

| Date | Course Name and Description | Location | Cost |
|---|---|---|---|
| March 24-28, 2014 | **SCALE Criticality and Shielding Course** Basic criticality calculations with KENO-VI; shielding analysis with automated variance reduction using MAVRIC; criticality accident alarm system analysis. | Oak Ridge, TN | $2000* |
| March 31-April 4, 2014 | **SCALE Burnup Credit Calculations** This course describes the use of SCALE tools to meet the requirements of NRC Interim Staff Guidance 8 Rev. 3 for the use of actinide and fission product burnup credit. Previous experience with SCALE is recommended. | Oak Ridge, TN | $2000* |
| April 7-11, 2014 | **SCALE Sensitivity and Uncertainty Calculations** TSUNAMI: 1D, 2D, and 3D $k_{eff}$ sensitivity/uncertainty analysis; 2D generalized sensitivity analysis for lattice physics; reactivity sensitivity analysis; advanced S/U methods for code and data validation using trending analysis and data assimilation (data adjustment) techniques; $k_{eff}$ burnup credit validation. | Oak Ridge, TN | $2000* |
| April 7-11, 2014 | **SCALE Lattice Physics and Depletion** 2D lattice physics calculations; 1D, 2D, and 3D depletion calculations; resonance self-shielding techniques including Monte Carlo Dancoff factors for non-uniform lattices; generation of libraries for ORIGEN-ARP. | OECD/NEA Data Bank, Issy-les-Moulineaux, Paris, France | 2000 Euros |
| April 14-16, 2014 | **SCALE/ORIGEN Standalone Fuel Depletion, Activation, and Source Term Analysis Course** Isotopic depletion, activation analysis, and source term characterization using ORIGEN/OrigenArp. | OECD/NEA Data Bank, Issy-les-Moulineaux, Paris, France | 1500 Euros |

***Full-time university students can register at a reduced rate.  Both professional and student registration fees are discounted $200 for each course over one.*

*FOREIGN NATIONAL VISITORS TO ORNL - Payment MUST be received at least one week prior to attending the training course. All foreign national visitors must register 40 days before the start date of the training course they plan to attend.*

For more information regarding this class, visit their website at
http://scale.ornl.gov/training_2014_spring.shtml

# SYMPOSIA



## The 15<sup>th</sup> International Symposium on Reactor Dosimetry (ISRD-15)

The 15th International Symposium on Reactor Dosimetry (ISRD-15) will take place from May 18-23, 2014 at the Hotel Aquabella in Aix-en-Provence, France. The aim of the symposium is to bring together the communities involved in research, development and applications related to reactor dosimetry.

The symposium is jointly organized by the European Working Group on Reactor Dosimetry (EWGRD) and the Committee E10 on Nuclear Technology and Applications of the American Society for Testing and Materials (ASTM).

For more information regarding this meeting, visit their website at http://reactordosimetry.org/index.html.

# 2014 CALENDAR

*April*

**International Conference of Computational Methods in Sciences and Engineering**, April 4-7, 2014, Athens, Greece. For up-to-date information about this conference, visit their website at http://www.iccmse.org/.

*May*

**3<sup>rd</sup> International Conference on Physics and Technology of Reactors and Applications (PHYTRA3)**, May 12-14, 2014, Tetouan, Morocco. For up-to-date information about this conference, visit their website at http://www.gmtr-association.com/phytra3/.

**International Symposium on Reactor Dosimetry (ISRD-15)**, May 18-23, 2014, Aix-en-Provence, France. For up-to-date information about this conference, visit their website at http://reactordosimetry.org/index.html.

**41<sup>st</sup> IEEE International Conference on Plasma Science (ICOPS) and the 20th International Conference on High Power Particle Beams (BEAMS)**, May 25-29, 2014, Washington, DC. For up-to-date information about this conference, visit their website at http://www.ece.unm.edu/icops-beams2014/.

## *June*

**2014 ANS Annual Meeting, Nuclear Challenges: Technologies and Analysis**, June 15-19, 2014, Reno, Nevada. For up-to-date information about this conference, visit their website at: http://www.ans.org/meetings/c_1.

## *July*

**9th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications**, July 6-11, 2014, Valencia, Spain. For up-to-date information about this conference, visit their website at http://irrma-9.webs.upv.es/index.html.

**INMM 55th Annual Meeting**, July 20-24, 2014, Atlanta, Georgia. For up-to-date information about this conference, visit their website at http://www.inmm.org//AM/Template.cfm?Section=Home.

**2014 IEEE Nuclear and Space Radiation Effects Conference**, July 14-18, 2014, Paris France. For up-to-date information about this conference, visit their website at http://www.nsrec.com/.

## *August*

**19th Pacific Basin Nuclear Conference**, August 24-28, 2014, Vancouver, British Columbia, Canada. For up-to-date information about this conference, visit their website at www.pbnc2014.org.

## *September*

**Topical Meeting of the ANS Radiation Protection and Shielding Division (RPSD 2014)**, September 14-18, 2014, Knoxville, TN. For up-to-date information about this conference and the Call for Papers, visit their website at www.rpsd2014.org.

## *October*

**PHYSOR 2014,** September 28 – October 3, 2014, Kyoto, Japan. For up-to-date information about this conference, visit their website at http://physor2014.org/#.

## *November*

**2014 ANS Winter Meeting and Nuclear Technology Expo, Nuclear – The Foundation of Clean Energy**, November 9-13, 2014, Anaheim, CA. For up-to-date information about this conference, visit their website at http://www.ans.org/meetings/c_1.

## *December*

**WINS 2014 Workshop on Elastic and Inelastic Neutron Scattering**, December 3-5, 2014, Dresden, Germany. For up-to-date information about this conference, visit their website at http://www.hzdr.de/db/Cms?pNid=3221.