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# Radiation Safety Information Computational Center

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*Think all you speak, but speak not all you think. Thoughts are your own; your words are so no more.—Patrick Delany*

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## Happy Birthday, Betty!

On the occasion of her 90<sup>th</sup> birthday, we honor Betty F. Maskewitz, former RSICC (formerly RSIC) Director (1970–1988), for her dedicated support of the Center and her promotion of international nuclear energy research and development. Betty’s work in the early days laid the foundation for RSIC, and she continues to serve as Goodwill Ambassador for the Center and for nuclear energy worldwide.

Congratulations sent to [riceaf@ornl.gov](mailto:riceaf@ornl.gov) will be forwarded to Betty.

## UMR Becomes MST

Effective January 1, 2008, the University of Missouri-Rolla became Missouri University of Science and Technology (Missouri S&T). The name change reflects a strategic plan that evolved over 15 years according to the announcement posted by Dr. Warren Kent Wray, Provost and Executive Vice Chancellor for Academic Affairs.

“The plan’s Vision reflects that of our Chancellor: to be recognized as a Top 5 technological research university by 2011. With the exceptional faculty and the extremely talented staff that is Missouri S&T, I am confident that we can attain that goal!”—Dr. Wray, source <http://provost.mst.edu/>.

## Texas Partners Establish Nuclear Power Institute

It was announced in December 2007 that Texas A&M University will be the headquarters for the Nuclear Power Institute (NPI) charged with making sure the Texas nuclear power industry has the engineers and technicians needed in the coming decades. The Institute partnership includes Texas A&M University-Kingsville, Texas A&M University-Corpus Christi and Prairie View A&M University, as well as several community colleges, the Texas State Technical College, the Texas Workforce Commission, civic leaders and high schools. The NPI will manage the statewide effort to provide more than 2,000 engineers and technicians to staff and operate at least six new nuclear power plants in Texas scheduled to go into operation over the next 10 years by assisting with the expansion of curriculums in high schools, junior colleges and four-year institutions and developing recruiting programs aimed at attracting students into fields that would prepare them to enter the nuclear power industry.

“The Texas A&M University System is uniquely configured with the ideal combination of education, research and service agencies and universities to lead this effort,” said Dr. G. Kemble Bennett, vice chancellor and dean of engineering. “The institute will make a significant impact upon the workforce and economy of the state and nation.”

*Texas A&M Engineering press release, December 10, 2007*

## Obituaries

**Chia-Yao (Peter) Fu** died January 2, 2008; he was 68. Dr. Fu retired in 2003 from the Oak Ridge National Laboratory where he was a research physicist in the Nuclear Science and Technology Division. He earned his Ph.D. from the University of Tennessee. Much of Dr. Fu’s work at ORNL involved the development of codes to produce and analyze data for what became the Evaluated Nuclear Data File (ENDF). Chia-Yao was active in sports and was a Tai Chi teacher.

Some of Dr. Fu’s colleague’s comment on their relationship with him:

*Tony Gabriel—*I had the opportunity to work with Peter for many years and never once did Peter let me down when I needed his expertise or help. He was always there during reviews and when we had to develop additional codes for high energy physics or detectors. During his last days at ORNL, he was working on what I consider to be some of his best work, which was obtaining cross sections for the production of residual nuclei from particle nucleus collisions. These calculations are probably the hardest to do with the current technology, but Peter was making great progress before his first illness.

*I will always remember Peter and miss him.*

*David M. Hetrick—* Peter was one of the smartest and most capable guys I have ever had the pleasure to work with. His knowledge of ENDF and everything that went into it was remarkable. And he was a really nice guy.

**Elizabeth Selcow-Stein** died September 19, 2007. She had been a member of ANS since 1989. She earned her bachelor’s degree from Columbia University in 1979, then continued to earn three more degrees; a master’s in nuclear engineering (1981), a master’s in philosophy (1983), and a doctorate in nuclear engineering (1984). She was an engineer at Grumman Corp. from 1984 to 1989. She then went to Brookhaven National Laboratory (1989–1998) where she performed analyses for several design concepts. She joined the Los Alamos National Laboratory in 1999 to work with the MCNP development team, providing user and milestone support.

## Changes to the Computer Code and Data Collection

### [CCC-743/CARL 2.2](#)

University of Pisa, DIMNP, Pisa, Italy, through the OECD Nuclear Energy Agency Data Bank, Issy-les-Moulineaux, France, contributed CARL 2.2 to the RSICC code collection. The CARL (Calculation of Radiotoxicities Lifetime) code, developed in 2003, calculates the radiotoxic (ingestion) inventory evolution vs. time of a given radionuclide composition. It was developed in order to perform the complex calculations regarding the nuclear spent fuel hazard vs. time. Version 2.1 of the code was enhanced to perform activity, dose and decay power calculations. It can display the 'Gamma Spectrum,' a 3-D plot indicating the activity of gamma rays vs. time and radiation energy. Version 2.2 of the code presents additional features including U232 isotope (very useful in thorium fuel cycles calculations) and common nuclear reactor activation materials (Cr51, Mn56, Fe59, Co60, Ni65, Cu64, Zn65, Zn69, Zr95, Mo99, Ta182, W187). It can also display two additional plots indicating equivalent gamma dose rate (in mSv/h) vs. time, both in air and in concrete/rock. Moreover, it displays masses (in grams) in the text output file of all the radionuclides at various logarithmically spaced time points.

CARL 2.2 runs on personal computers under the Windows 2000 or XP operating systems. It requires MATLAB software 6.5 release 13 (or higher). At the NEADB, it was tested on a Dell Precision 410, Pentium IV, 500 MHz under Windows XP with the MATLAB 7.0.4 compiler. The package is transmitted on a CD containing documentation, source code, sample input and output in a Windows ZIP file. Reference: "User Manual," University of Pisa, Italy (2006). Matlab® 6.5 – release 13 or higher on Windows-based PCs (C00743PC58600).

### [PSR-530/BOT3P-5.2](#)

ENEA Nuclear Data Center, Bologna, Italy, contributed this code system for 2D and 3D mesh generation and graphical display of geometry and results for radiation transport codes. Bologna Transport Analysis Pre Post Processors (BOT3P) was originally conceived as a set of standard FORTRAN 77 language programs in order to give the users of the DORT and TORT deterministic transport codes some useful diagnostic tools to prepare and check their input data files. Later versions extended the possibility to produce the geometrical, material distribution and fixed neutron source data to other deterministic transport codes such as TWODANT/THREEDANT of the DANTSYS system, PARTISN and, potentially, to any transport code through BOT3P binary output files that can be easily interfaced [see, for example, the Russian two-dimensional (2D) and three-dimensional (3D) discrete ordinates neutron, photon and charged particle transport codes KASKAD-S-2.5 and KATRIN-2.0]. This version of BOT3P contains important additions specifically addressed to radiation transport analysis for medical applications.

BOT3P-5.2 contains new graphics capabilities. Some of them enable users to select space sub-domains of the total mesh grid in order to improve the zoom simulation of the geometry, both in 2D and 3D cuts. Moreover, the new BOT3P module (PDTM) may improve the interface of BOT3P geometrical models to transport analysis codes. The following programs are included in the BOT3P software package: GGDM, DDM, GGTM, DTM2, DTM3, RVARSL, COMPARE, MKSRC, CATSM, DTET, and PDTM.

The package is transmitted as a Unix tar file on a CD. The tar file contains the source files for all BOT3P5.2 programs, test cases, implementation instructions, procedures, description of sample problem cases, and documentation. Reference: FIS P9H6-002 (March 2007). Linux PC (P00530MNYCP01)

## CSEWG-USNDP Proceedings Available

The Proceedings of CSEWG-USNDP Annual Meetings '2007 are now available at <http://www.ndc.bnl.gov/meetings/csewg2007/>, including the summary, presentations and the group

photo. The meeting was held November 7–9, 2007, at Brookhaven National Laboratory. Contact: Pavel Oblozinsky, Head, National Nuclear Data Center, Brookhaven National Laboratory, Upton, NY 11973 (phone 631-344-2814).

## ANS News

### 2008 Candidates Selected

The 2008 slate of officers for the ANS has been selected by the nominating committee. They are:

**Vice President / President-Elect Candidates**—*Yoon I. Chang* (ANL), and *Thomas L. Sanders* (Sandia).

#### **Board of Directors Candidates**

The ANS Board of Directors each serve a three year term that begins and ends during an ANS Annual Meeting. The ANS Bylaws and Rules require that U.S. and non U.S. members be proportionately represented; therefore, in the 2008 election, there are four U.S. Director At-Large, and one non-U.S. Director At-Large positions to be filled.

#### ***U.S. Director At-Large Position Candidates***

Nominated to run for the U.S. Director At-Large positions are: *Yousry Y. Azmy* (Penn State), *Marvin S. Fertel* (NEI), *Garry A. Harris* (HTS Enterprise, LLC), *Bernadette L. Kirk* (ORNL), *Charles R. Martin* (Defense Nuclear Facilities Safety Board), *John R. McGaha* (Entergy Operations Inc.), *Jasmina L. Vujic* (University of California-Berkeley), *Lloyd A. Wright* (Southern California Edison).

#### ***Non-U.S. Director At-Large Position Candidates***

Nominated to run for the Non-U.S. Director At-Large - Europe / Africa - position are: *Oum Keltoum Bouhelal* (National School of Mineral Industry), and *Dominique Greneche* (AREVA NP Inc).

#### **Voting**

Ballots for the 2008–2009 election will be mailed on February 25, 2008. As ratified by the ANS membership in June 1997, there will no longer be balloting at the Annual Meeting. Ballots for the Board of Directors election must be returned and received no later than 12 noon on Tuesday, April 8, 2008.

### ANS Scholarships

Deadlines are approaching on ANS scholarships for graduate and undergraduate students. Don't let an opportunity for additional support of your education pass you by. Application forms and scholarship details and requirements can be found at <http://www.ans.org/honors/scholarships/>.

## CONFERENCES, COURSES, SYMPOSIA

RSICC attempts to keep its users 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 to [riceaf@oml.gov](mailto:riceaf@oml.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. If the meeting is on a website, please include the url.

Every attempt is made to ensure that the links provided in the Conference and Calendar sections of this newsletter are correct and live. However, the very nature of the web creates the possibility that the links may become unavailable. In that case, please call or mail the contact provided.

## Texas A&M to Host 2008 ANS National Student Conference

Texas A&M University will host the 2008 ANS National Student Conference, “Expanding the Nuclear Family,” February 28–March 1, 2008, in College Station, Texas. The annual American Nuclear Society National Student Conference is the nuclear field’s hub for student professional development and career advancement. Over 500 students from all course levels, all disciplines of the nuclear sciences, and all regions of the globe come together with professionals in the nuclear field for an unparalleled professional growth opportunity. Interacting with professionals, hearing world-class speakers, networking with recruiters, and gaining real-world perspective are what students have come to expect from attending the annual American Nuclear Society National Student Conference. Expect to leave this conference with inspiration, employment, real-world perspective, and a memory of one of the best times you ever had in college. Conference Co-Chairs are Marie Cronholm (979-633-4388, email [lillian.marie@gmail.com](mailto:lillian.marie@gmail.com) and Matthew Gidden (225-892-3192, email [matthew.gidden@gmail.com](mailto:matthew.gidden@gmail.com)). Registration and program information can be found at <http://ans.tamu.edu/2008Conference.html>.

## [Spring 2008 SCALE Training Courses at ORNL](#)

Date	Title	Description
March 31–April 4, 2008	ORIGEN-ARP/TRITON Course	<p>ORIGEN-ARP: Isotopic depletion/decay and source terms using latest version of ORIGEN</p> <p>TRITON: 2-D reactor physics analysis using NEWT</p>
April 7–11, 2008	KENO-VI Criticality Safety Course	Criticality safety using the generalized geometry version of KENO (includes KENO3D and Gee Wiz).

The registration fee is \$1800 for each course. A late fee of \$300 will be applied for late registrations. A discount of \$300 per each additional week will be applied for registration to multiple courses. **Class size is limited and course may be canceled if minimum enrollment is not obtained one month prior to the course.** Course fees are refundable up to one month before each class. **Note that all attendees must be registered SCALE 5 or 5.1 users.** All foreign national visitors must register a minimum of 40 days prior to the start date of the training course they plan to attend. Course descriptions may be found at [http://www.ornl.gov/sci/scale/course\\_description.htm](http://www.ornl.gov/sci/scale/course_description.htm).

## Introductory and Advanced MCNP Visual Editor Training

Date	Class	Location
March 24–28, 2008	<a href="#">Introduction to MCNP using the MCNP/MCNPX Visual Editor</a>	Richland, WA
May 19–23, 2008	<a href="#">Introduction to MCNP using the MCNP/MCNPX Visual Editor</a>	Richland, WA
July 21–25, 2008	<a href="#">Introduction to the Visual Editor for Advanced MCNP/MCNPX Users.</a>	Richland, WA
Sept. 8–12, 2008	<a href="#">Introduction to MCNP using the MCNP/MCNPX Visual Editor</a>	Richland, WA
Nov. 3–7, 2008	<a href="#">Introduction to MCNP using the MCNP/MCNPX Visual Editor</a>	Richland, WA

Classes are taught using the most recent (beta) version of the Visual Editor Code. Beta versions will only be available to students that own the RSICC version 5 release. Bring proof of ownership to the class.

The introductory classes combine teaching on MCNP physics, along with instructions on how to use the Visual Editor. The advanced class assumes the user has experience using MCNP or MCNPX and focuses on Visual Editor topics. Computer demonstrations and exercises will focus on creating and interrogating input files with the Visual Editor. Advanced visualization work using MCNP will also be demonstrated. Both the introductory and advanced classes will be taught on Pentium computers running Windows 2000. Attendees are encouraged to bring their own input files for viewing and modifying in the visual editor. The course description and registration information can be found at <http://www.mcnvised.com/index.html>.

### MCNP Class Schedule

April 7–10, 2008	<a href="#">Criticality Calculations with MCNP5</a>	Los Alamos National Laboratory
May 12–16, 2008	<a href="#">MCNPX Intermediate Workshop</a>	ITN, Lisbon, Portugal
June 16–20, 2008	<a href="#">Introduction to MCNP5 and MCNPX</a>	Los Alamos National Laboratory

Introductory classes are for people 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 specification), Variance Reduction Techniques, Statistical Analysis, Criticality, Plotting of Geometry and Tallies, and Neutron / Photon / Electron Physics.

Advanced classes 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 students. Classes on specific topics are offered when there is sufficient interest. In the recent past, classes on variance reduction and on criticality have been taught.

Registration and the most current information can be found at <http://mcnp-green.lanl.gov/classinformation.html>.

## International Symposium on Reactor Dosimetry

The 13<sup>th</sup> *International Symposium on Reactor Dosimetry* will be held the May 25–30, 2008 in the Hotel Akersloot, 6 kilometers south of Alkmaar in the Netherlands. This Symposium has a long history and has been organized approximately every three years alternately in Europe and the United States or

Japan. The Symposium theme is dosimetry for the assessment of irradiated reactor materials and reactor experiments, featuring radiation metrology techniques, data bases, and standardization.

This Symposium is jointly organized by ASTM Committee E 10 on Nuclear Technology and Applications and the European Working Group on Reactor Dosimetry (EWGRD). The 13<sup>th</sup> symposium is hosted by The Joint Research Centre, Institute for Energy, Petten. Up-to-date information is available at the website, <http://safelife.jrc.nl/ISRDL/>.

## **American Nuclear Society: 2008 Annual Meeting**

“*Nuclear Science and Technology: Now Arriving on Main Street*” is the theme for the 2008 American Nuclear Society Annual Meeting which will be held June 8–12, 2008, in Anaheim, California. It will include three embedded topical meetings which are described below. The call for papers has been issued for summaries on the following track themes:

- Nuclear Science and Technology: Now Arriving on Main Street
- Nuclear Power Plant Design, Construction, and Management
- Fuel Cycle and Waste Management Technology
- Nuclear Facility and Criticality Safety
- Environmental Science and Technology
- Nonpower and Medical Applications of Radiation
- Nuclear Science and Engineering
- Advanced Energy Research and Emerging Technologies
- Education, Training, and Communication with the Public
- Nuclear Security and Emergency Response
- Professional Development

Guidelines and templates for papers submitted for the meeting and topicals can be found at <http://www.ans.org/meetings/docs/2008/am2008-cfp.pdf>.

## **ICAPP'08**

2008 *International Congress on Advances in Nuclear Power Plants* (ICAPP'08) will be held June 8-12, 2008, in Anaheim, California. This congress will bring together international experts of the nuclear industry involved in the operation, development, building, regulation, and research related to nuclear power plants. The program will cover the full spectrum of nuclear power plant issues from design, deployment and construction of plants to research and development of future designs and advanced systems. Details and up-to-date information can be found by contacting 2008 International Congress on the Advances in Nuclear Power Plants (ICAPP '08), Attn: Lynne Schreiber, PO Box 116502, Gainesville, FL 32611-6502 (phone 1-352-392-9722, fax 1-352-392-8656, email: [icapp@ans.org](mailto:icapp@ans.org)) url [www.ans.org/goto/icapp08](http://www.ans.org/goto/icapp08).



## **Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors**

*Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors*, will be held June 8–12, 2008, Anaheim, California. The Generation IV International Forum has selected six advanced systems for consideration: the gas-cooled fast reactor system, lead-cooled fast reactor system, molten salt reactor system, sodium-cooled fast reactor system, supercritical water-cooled reactor system, and very-high-temperature reactor system. This embedded topical will bring together fuels and materials experts in

all areas of Generation IV technologies. The ANS will publish accepted summaries in the *Transactions*. The General Chairs for the meeting are Todd Allen, University of Wisconsin, and Lance Snead, Oak Ridge National Laboratory.

## **Isotopes for Medicine and Industry**

*Isotopes for Medicine and Industry* will be held June 9–11, 2008, in Anaheim, California. The continuing rapid growth of radioisotopes for both medical and industrial applications is of national and international interest. The expanding applications and associated production issues surrounding the supply of research, diagnostic, therapeutic, environmental, and industrial radioisotopes will be discussed. Accepted summaries will be included in the *Transactions* CD that will be distributed at the ANS Annual Meeting. The General Chair is Wynn A. Volkert, University of Missouri, Columbia, and the Technical Program Chair is Ralph A. Butler, University of Missouri, Columbia.

## **NPAE-Kyiv2008**

The *Second International Conference on Current Problems in Nuclear Physics and Atomic Energy (NPAE-Kyiv2008)* will be held June 9–15, 2008 in Kyiv, Ukraine.

The first International Conference on Current Problems in Nuclear Physics and Atomic Energy (NPAE-Kyiv2006) was held in Kyiv (Ukraine) in 2006; the proceedings are available at [http://www.kinr.kiev.ua/NPAE\\_Kyiv2006/](http://www.kinr.kiev.ua/NPAE_Kyiv2006/).

This conference brings together scientists to share knowledge in current problems of nuclear physics and atomic energy. The NPAE-Kyiv2008 conference will cover the following topics:

- collective processes in atomic nuclei,
- nuclear reactions at low and high energies,
- nuclear structure and decay data,
- rare nuclear processes,
- nuclear astrophysics,
- neutron and reactor physics,
- nuclear data and data evaluation,
- problems of atomic energy,
- applied nuclear physics in medicine and industry, and
- experimental facilities and detection techniques.

One-page abstracts are due via email to [npae-kyiv2008@kinr.kiev.ua](mailto:npae-kyiv2008@kinr.kiev.ua) by March 1, 2008. The conference will consist of plenary sessions, parallel sessions, and poster sessions. Plenary sessions are composed of invited talks, and parallel sessions consist of invited talks and oral presentations selected from contributions. The working language of the conference is English.

The NPAE-Kyiv2008 conference is organized by the National Academy of Sciences of Ukraine (NASU, <http://www.nas.gov.ua>), the Institute for Nuclear Research of NASU, Kyiv (KINR, <http://www.kinr.kiev.ua>) in collaboration with Taras Shevchenko National University of Kyiv (NTSU, <http://www.univ.kiev.ua>). The conference chairman is I.M. Vyshnevskiy (KINR) and the scientific secretaries are V.Yu. Denisov (KINR) and O.O.Gritzay (KINR).

The Proceedings of the Conference will be published by the Publishing Department of KINR; selected papers will be also published in *Nuclear Physics and Atomic Energy* (<http://jnpae.kinr.kiev.ua>).

Please address all mail and questions concerning the scientific program, publication, etc. to: Dr. Vitali Yu. Denisov or Dr. Olena O. Gritzay, Institute for Nuclear Research, Prospect Nauky, 47, Kyiv,

03680, Ukraine (email [npae-kyiv2008@kinr.kiev.ua](mailto:npae-kyiv2008@kinr.kiev.ua)). Information on the conference may be found at the website <http://www.kinr.kiev.ua/NPAE-Kyiv2008>.

## Practical MCNP for the Health Physicist, Medical Physicist, and Rad Engineer

**DATES:** 23–27 June 2008

**FEE:** \$1,800 per person

**PLACE:** The MESA Complex, Room 130, University of New Mexico-Los Alamos Campus

Monte Carlo type calculations are ideally suited to solving a variety of problems in radiation protection and dosimetry. The Los Alamos MCNP™ code is a general and powerful Monte Carlo transport code for photons, neutrons, and electrons, and can be safely described as the “industry standard.” This course is aimed at the HP, medical physicist, and rad engineer with no prior experience with Monte Carlo techniques. The focus is almost entirely on the application of MCNP™ to solve a variety of practical problems in radiation shielding and dosimetry. The intent is to “jump start” the student toward using MCNP™ productively. With a little practice and study of the examples, many will find they are able to solve problems that have, in the past, been out of reach.

**Course content:** Extensive interactive practice sessions are conducted on a personal computer. Topics will include an overview of the MCNP™ code and the Monte Carlo method, input file preparation, geometry, source definition, standard MCNP tallies, interpretation of the output file, exposure and dose rate calculations, radiation shielding, photon skyshine, detector simulation and dosimetry. Students will be provided with a comprehensive class manual and a CD containing all of the practice problems. This course has been granted 32 Continuing Education Credits by the AAHP (2005-00-003), and 4.5 CM points by the American Board of Industrial Hygiene. The course is offered by the Health Physics Measurements Group at the Los Alamos National Laboratory and is co-sponsored by RSICC.

Registration is available online at: <http://drambuie.lanl.gov/~esh4/mcnp.htm>. Non-US citizens need to register 60 days in advance to allow for necessary visitor approvals. Make checks payable to the University of California (checks must be in U.S. dollars on a U.S. bank) and mail together with name, address, and phone number to David Seagraves, Mail Stop J573, Los Alamos National Laboratory, Group RP-2, MCNP Class, Los Alamos, NM 87545. Inquiries regarding registration and class space availability should be made to David Seagraves, 505-667-4959, fax: 505-665-7686, e-mail: [dseagraves@lanl.gov](mailto:dseagraves@lanl.gov). Technical questions may also be directed to Dick Olsher, 505-667-3364; e-mail: [dick@lanl.gov](mailto:dick@lanl.gov).

Please note that this course is separate from and independent of the courses being offered by the MCNP and MCNPX Teams at LANL.

[Dick Olsher](#)

## IRRMA 7



The 7<sup>th</sup> International Topical Meeting on Industrial Radiation and Radioisotope Measurement Application will take place June 22–27, 2008, in Prague, Czech Republic. It is organized to bring together scientists and engineers from around the world who are interested in radiation and radioisotope measurement applications. The first meeting in this series took place in Pinehurst, North Carolina, U.S.A. in 1988. The meeting is devoted to current trends and future issues. The scientific sessions will include invited lectures by leading experts in the field, contributed oral papers and poster presentations of contributed papers. Attendees will have an opportunity to share ideas on industrial uses of radiation and radioisotopes,

and also on research and applications in related fields such as medicine, art and cultural heritage, the environment, detection of explosives and contraband, materials testing and new trends in radiation sources and detector development. The deadline for submission of abstract is February 29, 2008. Topics to be included on the conference agenda include:

- Ionizing radiation sources and measurement
- Industrial applications and radiation technologies
- Radiation in physical and material sciences
- Biological and medical applications of radiation
- Radiation in environmental sciences and research
- Applications to archaeometry and cultural heritage
- Detection of contraband and explosives
- Monte Carlo Modelling

Papers recommended by the standard refereeing process will be published in the conference proceedings, in a special issue of *Applied Radiation and Isotopes*. The Chairman of the Organizing Committee is Ladislav Musílek, Czech Technical University in Prague, Faculty of Nuclear Sciences and Physical Engineering, Břehová 7, 115 19 Praha 1, Czech Republic. The program and details about the conference will be posted at <http://irrna7.fjfi.cvut.cz> and email may be sent to [irrna7@fjfi.cvut.cz](mailto:irrna7@fjfi.cvut.cz).

## **PHYSOR'08**

The International Conference on the Physics of Reactors (PHYSOR'08) will be held at the Kursaal Conference Center, Interlaken, Switzerland, September 14–19, 2008. The conference theme is “Nuclear Power: A Sustainable Resource,” and is jointly organized by the Paul Scherrer Institut and the Swiss Nuclear Society. This international conference follows the tradition of the earlier PHYSOR meetings and seeks to provide a forum for worldwide experts in reactor physics, nuclear power plant analysis and related technologies. Relevant information may be found at <http://www.physor2008.ch/>.

## **18th Topical Meeting on the Technology of Fusion Energy**

The 18th Topical Meeting on the Technology of Fusion Energy (18<sup>th</sup> TOFE) will be held in San Francisco, California, September 28–October 2, 2008. The TOFE meeting provides a forum for sharing the exciting progress made in fusion research as well as presenting the future plans for national and worldwide fusion programs. The conference is sponsored by the American Nuclear Society (ANS), Northern California Section of the ANS, Lawrence Livermore National Laboratory, and the Atomic Energy Society of Japan. The call for papers has been issued and abstracts on the following topics may be submitted beginning on March 1, 2008.

- NIF, ITER and other experimental devices
- Material and component testing facilities
- Magnets
- Next step facilities & Demo
- Diagnostics
- Power plant studies
- First walls, blankets & shields
- Alternate, non-electric applications
- IFE driver and chamber technology
- Plasma engineering, heating and control
- IFE target design, fabrication and injection
- Divertors and other high heat flux components
- Tritium breeding, handling and processing
- Nuclear analysis and experiments
- Safety and environment
- Computational tools and validation experiments
- Materials development and modeling
- Fabrication, assembly and maintenance
- Power conversion and conditioning

For additional information, please contact the General Chair: Jeff Latkowski, 18th TOFE Meeting, 4435 First Street #155, Livermore, CA 94551 (phone 925-423-9378, fax 925-424-6401, email: [latkowski@llnl.gov](mailto:latkowski@llnl.gov)). Check the website, <http://www.18th-tofe.com/>, frequently for updated information, registration information, etc.

## IRPA 12

The 12th International Congress of the International Radiation Protection Association (IRPA 12), will take place in Buenos Aires, Argentina, October 19–24, 2008. To support the Congress motto, “strengthening radiation protection worldwide” the scientific areas and topics are divided into three parts:

### Part 1: Epistemological Basis of Radiation Protection

1. Characterisation of Radiation Exposure
2. Biological Effects of Radiation Exposure

### Part 2: Radiation Protection Paradigm

1. Developing the Radiation Protection Framework
2. Developing Protection Policies, Criteria, Methods and Culture
3. Emergency Planning, Preparedness and Response

### Part 3: Radiation Protection and Safety in Practice

1. Nuclear Installations
2. NIRs
3. Medicine
4. NORM in Industry
5. Other Applications and Practices

All information regarding registration, technical program, etc., may be found at the website, [www.irpa12.org.ar](http://www.irpa12.org.ar). Questions regarding all aspects of the Congress may be addressed to [secretariat@irpa12.org.ar](mailto:secretariat@irpa12.org.ar).

## LOWRAD 2008

The 7<sup>th</sup> International Meeting on the Effects of Low Doses of Radiation in Biological Systems: New Perspectives on Human Exposure will be held in Lisbon, Portugal, November 27–29, 2008. The meeting is being organized by members of the Radiobiology group of the Department of Radiological Protection and Nuclear Safety of the Portuguese Nuclear and Technological Institute. Topics include:

- Epidemiology of occupational and environmental low dose exposure
- Novel biomarkers for population screening in low dose exposures
- Non-targeted effects
- Computer simulation and modelling for low dose radiation risk
- Genetic susceptibility
- Radioecology
- Low dose and protracted exposure effects
- Validity of the linear non-threshold model
- Hormesis and adaptive response
- Microenvironment modulation of radiation response
- Radioactive waste management
- Micro-array and proteomic analysis
- DNA repair and misrepair
- Radioprotectors and radiosensitizers
- Molecular and biophysical approaches to radiation-induced carcinogenesis
- Non-genetic effects of radiation
- Genomic and chromosomal instability
- Long term effects of the medical applications of radiation
- Microdosimetry and nanodosimetry

The deadline for abstract submission is April 30, 2008. Submission via the website will be available soon. Contact Margarida Goulart de Medeiros (phone +351 21 994 6347, fax +351 21 994 1995), Octávia Monteiro Gil (phone +351 21 994 6344, fax +351 21 994 1995), or Secretariat, Luisa Oliveira (email [lowrad2008@itn.pt](mailto:lowrad2008@itn.pt)), Nuclear and Technological Institute Department of Radiological Protection and Nuclear Safety Estrada Nacional 10, 2686 - 953 Sacavém, Portugal. Watch the website, <http://www.lowrad2008.itn.pt/index.html>, for abstract submission and up-to-date information.

## **Radionuclide Therapy and Radiopharmaceutical Dosimetry**

The 3rd International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry and Workshop on Alpha-Emitting Radionuclides in Therapy will convene June 13–17, 2009, in Toronto, Canada, in conjunction with the 2009 Society of Nuclear Medicine (SNM) Annual Meeting, which is being planned. This symposium follows the successful first (Helsinki 2004) and second (Athens 2006) symposiums. This 2009 RTRD Symposium will blend with SNM sessions in oncology, radiopharmaceutical chemistry, radiobiology and dosimetry. The workshop will highlight current progress in the use of alpha-emitters for cancer therapy, continuing a series of successful alpha-emitter workshops. Symposium topics will include:

- Data collection and quantitative imaging
- Biodistribution and pharmacokinetics
- Clinical dosimetry and treatment planning
- Alpha emitters in cancer therapy
- Auger electron emitters
- Radiobiological studies
- Therapy of skeletal metastases and bone pain palliation

All announcements and mailings for the Symposium will be electronic and by website postings. Those who wish to participate in the Symposium must register with SNM to attend the Annual Meeting. Separate Symposium registration will not be offered. Registration, housing, local arrangements, transportation, and other logistical arrangements will be handled by SNM. Local arrangement details will be available at a later date on the SNM website at: [www.snm.org](http://www.snm.org). A future announcement will provide instructions for submitting abstracts. George Sgouros ([gsgouros@jhmi.edu](mailto:gsgouros@jhmi.edu)) is Vice-chair of the organizing Committee and Michael Lassmann ([Lassmann\\_M@klinik.uni-wuerzburg.de](mailto:Lassmann_M@klinik.uni-wuerzburg.de)) is Chair of the Committee.

## **CALENDAR**

### **February 2008**

4<sup>th</sup> Workshop on “Advanced Reactors with Innovative Fuels” (ARWIF-2008), Feb. 20–22, 2008, Tsuruga & Fukui, Japan. Contact: Dr. Enrico Sartori, OECD/NEA Data Bank, Le Seine-Saint Germain, 12 boulevard des Iles, F-92130 Issy-les-Moulineaux, France (phone +33 1 45 24 10 72 / 78, fax +33 1 45 24 11 10 / 28, email: [sartori@nea.fr](mailto:sartori@nea.fr)) url <http://www.nea.fr/html/science/meetings/ARWIF2008/index.html>.

WM2008, Feb. 24–28, 2008, Phoenix, AZ. Contact: WM08 Program Advisory Committee Chairman Gary Benda (phone 803-345-2170 or email [gbenda@wmarizona.org](mailto:gbenda@wmarizona.org)) url [http://www.wmsym.org/html/wm\\_conference.cfm](http://www.wmsym.org/html/wm_conference.cfm).

2008 ANS National Student Conference, Feb. 28–March 1, 2008, College Station, Texas. Contact: Conference Co-Chairs Marie Cronholm (979-633-4388, email [lillian.marie@gmail.com](mailto:lillian.marie@gmail.com)) and Matthew Gidden (225-892-3192, email [matthew.gidden@gmail.com](mailto:matthew.gidden@gmail.com)) url <http://ans.tamu.edu/2008Conference.html>.

## March 2008

International Workshop on Monte Carlo Codes, March 3–4, 2008, Birchwood Conference Centre, Risley, Warrington, Cheshire UK. Contact: Paul Hulse (Paul.Hulse@sellafieldsites.com, phone +44 (0)1925 833073, or fax +44 (0)1925 833930) or Andrew Cooper (Andrew.J.Cooper@sellafieldsites.com, phone +44 (0)1925 833164 or fax +44 (0)1925 833930) url <http://www.mcneg.org.uk/>.

## April 2008

[Criticality Calculations with MCNP5](#), April 7–10, 2008, Los Alamos National Laboratory. Contact: [nbutner@lanl.gov](mailto:nbutner@lanl.gov), url <http://mcnpx.lanl.gov/>.

11<sup>th</sup> International Conference on Radiation Shielding (ICRS-11) and the 15th Topical Meeting of the Radiation Protection and Shielding Division (RPSD-2008) of the American Nuclear Society, April 13–18, 2008, Callaway Gardens, Pine Mountain, Georgia. Contact: General Chair, Nolan Hertel, Georgia Institute of Technology (email [nolan.hertel@me.gatech.edu](mailto:nolan.hertel@me.gatech.edu)) or General Co-Chair, Pedro Vaz, ITN, Portugal (email [pedrovaz@itn.pt](mailto:pedrovaz@itn.pt)) url <http://icrs11.me.gatech.edu/index.htm>.

## May 2008

Intermediate MCNPX, May 12–16, 2008, Lisbon, Portugal. Contact: [nbutner@lanl.gov](mailto:nbutner@lanl.gov), url <http://mcnpx.lanl.gov/>.

13th International Symposium on Reactor Dosimetry, May 25–30, 2008, Alkmaar in the Netherlands. Contact: the website at <http://safelife.jrc.nl/ISRDL/>.

## June 2008

American Nuclear Society: 2008 Annual Meeting, “Nuclear Science and Technology: Now Arriving on Main Street,” June 8–12, 2008, Anaheim, California. The call for papers can be found at <http://www.ans.org/meetings/docs/2008/am2008-cfp.pdf>.

2008 International Congress on Advances in Nuclear Power Plants (ICAPP’08), June 8–12, 2008, Anaheim, California. Information can be found at <http://www.inspi.ufl.edu/icapp08/index.html>.

Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors, June 8–12, 2008, Anaheim, California. Contact: Todd Allen, University of Wisconsin, 529 Engineering Research Building, 1500 Engineering Dr., Madison, WI 53706 (phone 608-265-4083, email [allen@engr.wisc.edu](mailto:allen@engr.wisc.edu)).

Isotopes for Medicine and Industry, June 9–12, 2008, Anaheim, California. Contact: Wynn A. Volkert, University of Missouri, Room 330 Hadley Hall, Columbia, MO 65211 (phone 573-882-6759, email [VolkertW@health.missouri.edu](mailto:VolkertW@health.missouri.edu)).

2<sup>nd</sup> International Conference on Current Problems in Nuclear Physics and Atomic Energy (NPAE-Kyiv2008), June 9–15, 2008, Kyiv, Ukraine. Contact: Dr. Vitali Yu. Denisov or Dr. Olena O. Gritzay, Institute for Nuclear Research, Prospect Nauky, 47, Kyiv, 03680, Ukraine (email [npaekyiv2008@kinr.kiev.ua](mailto:npaekyiv2008@kinr.kiev.ua)) url <http://www.kinr.kiev.ua/NPAE-Kyiv2008>.

[Introduction to MCNP5 and MCNPX](#), June 16–20, 2008, Los Alamos National Laboratory. Contact: [nbutner@lanl.gov](mailto:nbutner@lanl.gov), url <http://mcnpx.lanl.gov/>.

7th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Application, June 22–27, 2008, Prague, Czech Republic. Contact: E-mail: [irрма7@fjfi.cvut.cz](mailto:irрма7@fjfi.cvut.cz) (phone only if absolutely necessary 420 224358246, Ms. Niederlová) url <http://irрма7.fjfi.cvut.cz/>.

Practical MCNP for the Health Physicist, Medical Physicist, and Rad Engineer, June 23–27, 2008, University of New Mexico-Los Alamos Campus. Contact: David Seagraves (phone 505-667-4959, fax 505-665-7686, e-mail [dseagraves@lanl.gov](mailto:dseagraves@lanl.gov)) url <http://drambuie.lanl.gov/~esh4/mcnp.htm>.

## September 2008

PHYSOR’08, Sept. 14–19, 2008, Interlaken, Switzerland. Contact: [info@physor2008.ch](mailto:info@physor2008.ch), url <http://www.physor2008.ch/>.

18th Topical Meeting on the Technology of Fusion Energy (18th TOFE), Sept. 28–Oct. 2, 2008, San Francisco, California. Contact: General Chair: Jeff Latkowski, 18th TOFE Meeting, 4435 First Street #155, Livermore, CA 94551 (phone 925-423-9378, fax 925-424-6401, email: [latkowski@llnl.gov](mailto:latkowski@llnl.gov)) url <http://www.18th-tofe.com/>.

#### **October 2008**

12th International Congress of the International Radiation Protection Association (IRPA 12), Oct. 19–24, 2008, Buenos Aires, Argentina. Contact: [secretariat@irpa12.org.ar](mailto:secretariat@irpa12.org.ar), url [www.irpa12.org.ar](http://www.irpa12.org.ar).

#### **November 2008**

13<sup>th</sup> International Conference on Neutron Capture Therapy, Nov. 3–7, 2008, Florence, Italy. Contact: ICNCT-13 Secretary General ([icnct-13@pv.infn.it](mailto:icnct-13@pv.infn.it)) url <http://www.pv.infn.it/icnct-13/>.

LOWRAD 2008, Nov. 27–29, 2008 Lisbon, Portugal. Contact: Margarida Goulart de Medeiros (phone +351 21 994 6347, fax +351 21 994 1995), Octávia Monteiro Gil (phone +351 21 994 6344, fax +351 21 994 1995), or Secretariat, Luisa Oliveira (email [lowrad2008@itn.pt](mailto:lowrad2008@itn.pt)), Nuclear and Technological Institute Department of Radiological Protection and Nuclear Safety Estrada Nacional 10, 2686 - 953 Sacavém, Portugal. url <http://www.lowrad2008.itn.pt/index.html>.

#### **June 2009**

3rd International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry and Workshop on Alpha-Emitting Radionuclides in Therapy, June 13–17, 2009, Toronto, Canada. Contact: George Sgouros ([gsgouros@jhmi.edu](mailto:gsgouros@jhmi.edu)) or Michael Lassmann ([Lassmann\\_M@klinik.uni-wuerzburg.de](mailto:Lassmann_M@klinik.uni-wuerzburg.de)) url [www.snm.org](http://www.snm.org).