

# Radiation Protection and Shielding Division (RPSD)

# **Spring 2012 Newsletter**

# Message from the Chair

### Greetings, RPSD Members!

As my one-year term Chair position in RPSD will be finalizing at the end of the 2012 ANS Annual Meeting in June, I would like to summarize and highlight our recent efforts and accomplishments.

### • Program at 2012 ANS Annual Meetings:

- o RPSD will be offering the following sessions at the 2012 ANS Annual Meeting:
  - Radiation Protection and Shielding: General
  - Computational Tools for Radiation Protection and Shielding
  - Research Applications of Neutron Spectrometry and Dosimetry (Reactor Physics Division session co-sponsored by RPSD)
  - Radiation Protection and Shielding—Roundtable
  - Reactor Pressure Vessel Neutron Exposure Monitoring—Tutorial
  - MCNP/MCNPX Tutorial for Homeland Security (co-sponsored by the Young Members Group (YMG))

### • Standing Committees:

 New members were appointed to the RPSD Standing Committees; please find a complete list of the members at the end of this newsletter.

### • Website:

• We are in the process of developing a new and improved RPSD website with help from **Tim Cahill**, M.S. student at the Georgia Institute of Technology.

### • Bylaws and Rules:

The RPSD bylaws and rules document, which was in draft form, was edited by Erik Shores (LANL) and was reviewed and revised by the RPSD Executive Committee. The revised RPSD bylaws and rules document was submitted to the ANS Bylaws and Rules Committee for approval in May 2012. One major change added to the RPSD rules is an increase of the Treasurer term from one year to two years. A two-year term will enable a Treasurer to serve more effectively in RPSD.

### • Strategic Plan:

One-year and five-year RPSD strategic plans were prepared and sent to the ANS Planning Committee in January 2012, and is available at:
 <a href="http://rpsd.ans.org/executive/2012">http://rpsd.ans.org/executive/2012</a> Strategic Plan RPSD.pdf

### • Review of ANS Position Statement 41, "Health Effects of Low Level Radiation":

RPSD is forming a special committee to review ANS Position Statement # 41.
 The position statement and background information are available at: <a href="http://www.new.ans.org/pi/ps/docs/ps41.pdf">http://www.new.ans.org/pi/ps/docs/ps41.pdf</a>
 http://www.new.ans.org/pi/ps/docs/ps41-bi.pdf

### • Commitment to the Young Members Group:

- o **Ahmad Ibrahim**, Ph.D. student at the University of Wisconsin-Madison, was appointed to the RPSD liaison to YMG position.
- o RPSD continues to collaborate with YMG at ANS National meetings by organizing sessions co-sponsored by YMG.

### • Commitment to Students:

- RPSD contributed \$2,500 to the 2012 ANS Student Conference. In addition, RPSD hosted a booth at the 2012 ANS Student Conference. The booth preparations were successfully completed with major efforts by Shaheen Dewji (Ph.D. student at Georgia Institute of Technology), and help from Ahmad Ibrahim.
- The student executive committee member position continues in RPSD, to support student involvement in governance activities; the position includes financial support to the student to attend ANS National Meetings.
- o RPSD continues to award student summaries/presentations at RPSD sessions at ANS National Meetings, to recognize student's technical involvement in RPSD.
- o RPSD is working with ANS to prepare a student survey; the survey will help RPSD to improve the Division's support to students.

### • Peer Recognition/Awards:

- o RPSD awarded two Professional Excellence Awards, one Service Recognition Award, one ANS National Meeting Best Professional Summary/Presentation Award, and one Blizard Scholarship last year.
- RPSD will be awarding Professional Excellence/Service Recognition/Rockwell
  Lifetime Achievement awards this year as well as professional and student
  summary/presentation awards at ANS National Meetings, and a Blizard
  Scholarship.
- ANS Fellow nominations among the RPSD members will be made, by the RPSD Honors and Awards Committee at the 2012 ANS Annual Meeting.

I would like to encourage all members to participate in the RPSD Executive and Program Committee meetings at ANS National Meetings; please contact the RPSD officers or Executive Committee members for your suggestions and feedback that would help us to improve RPSD.

Thanks to all who have been contributing to RPSD sessions at National Meetings and our topical meetings. I look forward to your participation at our upcoming topical meeting, ICRS-12 & RPSD-2012, in Nara, Japan, September 2-7, 2012, organized by the Atomic Energy Society of Japan (http://www.icrs12.org/).

I truly enjoyed the opportunity of serving in RPSD; I served as an Executive Committee member for three years, Treasurer for two years, Secretary for one year, Vice-Chair for one year, and finally, Chair for one year. I would like to thank all RPSD members and ANS staff for their support in the past years. I look forward to seeing you all, at future ANS meetings!

Best Regards,

Arzu Alpan, RPSD Chair alpanfa@westinghouse.com

# **RPSD Sessions at the 2012 ANS Winter Meeting**

San Diego, California, November 11-15, 2012

The Radiation Protection and Shielding Division is organizing the following sessions at the 2012 ANS Winter Meeting in San Diego, California, November 11-15, 2012:

- 17. Radiation Protection and Shielding
- 17a. Radiation Protection and Shielding: General
- 17b. Computational Tools for Radiation Protection and Shielding
- 17c. Shielding for Radioactive Material Packages
- 17d. RSICC: Celebrating 50 Years of Service to the Nuclear Research Community-Panel
- 17e. Ethics in Professional Engineering-Panel
- 17f. Radiation Shielding for Space Applications

The Call for Papers of this meeting is available at <a href="http://www.ans.org/meetings/winter/">http://www.ans.org/meetings/winter/</a>; the deadline for submitting summaries is June 8, 2012. Please consider contributing papers to these RPSD sessions.

In addition, an RPSD Special Session on the DOE Russian Health Studies Program is in the planning stages for the San Diego Meeting. It will cover some of the latest human effects data from that ongoing study. See <a href="http://www.hss.energy.gov/healthsafety/ihs/hstudies/russian\_health.html">http://www.hss.energy.gov/healthsafety/ihs/hstudies/russian\_health.html</a> for more information.

### **Bylaws and Rules Committee Update**

### Erik F. Shores, RPSD Bylaws and Rules Chair

The current bylaws and rules for the American Nuclear Society are at <a href="http://www.new.ans.org/about/br/">http://www.new.ans.org/about/br/</a>. The new templates for Professional Division's bylaws and rules are at <a href="http://www.new.ans.org/about/committees/brc/">http://www.new.ans.org/about/committees/brc/</a> and were used in the rewriting of the rules and bylaws for the division.

Over the last few months feedback has been solicited from the Executive Committee and we now have an RPSD-specific set of rules to complement our "standardized" bylaws. Although final approval was not yet complete at the time of this writing, it is fully expected to be approved before the summer meeting.

I'd like to thank those taking the time to read our now 19 page set of standardized bylaws and rules. In particular, I'd like to thank Arzu Alpan, Steve Nathan, Douglas Peplow and Joel Risner for their comments and suggestions. Reading (or writing) such material is not exactly glamorous and I do appreciate the RPSD-member feedback. On a historical note, when I was asked by Ray Klann to chair this committee in 2006, I inherited a set of 1979-vintage bylaws last updated in 1982. Since 2006, the "standardized" bylaws have (slowly) evolved into the present set and we now have a document in place that should be easy to maintain.

### **Honors and Awards**

We would like to encourage our members to nominate their peers to the following RPSD awards:

### **Rockwell Award**

The Lifetime Achievement award, also referred to as the Rockwell Award, is based on long-term contributions in research, development of technology, or education in radiation measurement, protection, shielding, and dosimetry. It is expected that most recipients will have been long-time active members of the American Nuclear Society. Moreover, most recipients will be authors of publications that made significant contributions to the science of radiation protection and shielding.

### **Professional Excellence Award**

The basis for this award would usually be a major contribution to the state of the art, an important publication, a major technical achievement, or a sustained record of significant accomplishment and technical excellence.

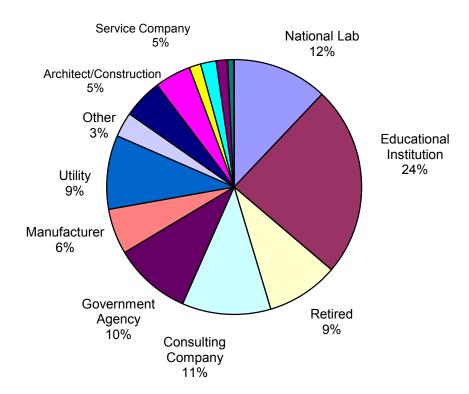
### **Service Recognition Award**

This award is in recognition of outstanding past or current service to the Society and/or Division by a member of the Division. This award may be characterized as a distinguished service award or outstanding service award.

# Membership

The distribution of the RPSD membership by category is given in the following pie chart.

2% or Less Private Research Lab Supplier Medical Institution Test Lab Construction Company Unknown



# **2012 RPSD Election Results**

Congratulations to the newly elected members of the Executive Committee and Division officers!

Officers	<b>Executive Committee</b>
Nolan E. Hertel - Chair	Irina I. Popova
X. George Xu - Vice Chair	Eric A. Burgett
Shaheen A. Dewji - Secretary	Arkady Serikov (International Member)
Joel M. Risner - Treasurer	Justin Anthony Vazquez (Student Member)

### ANS-6.6.1 and ANS-6.1.2 Standards News

The ANSI/ANS-6.6.1, "Calculation and Measurement of Direct and Scattered Gamma Radiation from LWR Nuclear Power Plants" (Dick Amato, Chair) review process has been started and it is projected that it will be submitted for re-affirmation in November 2012 with the following changes:

- Under Terms and Definitions, "dose rate and absorbed dose"
  - The use of SI units with traditional units specified in parentheses will be continued to be given in the tables.
- The use of the term "Dose Equivalent Index" in the standard is outdated and will be replaced by "Effective Dose" per ICRP-1991, Publication 60.
- There are several referrals in the text to Ge(Li) detectors, but most facilities have replaced them with HPGe detectors. Therefore, the standard will be updated accordingly.
- The reference calculated results will be updated with that from a more modern code (e.g., MCNP).
- Several editorial changes will be performed.

**ANSI/ANS-6.1.2-**1999, "Neutron and Gamma-Ray Cross Sections for Nuclear Radiation Protection Calculations for Nuclear Power Plants" was revised and is scheduled to be submitted to ANS for approval before the 2012 ANS Annual Meeting in June (Arzu Alpan, Chair).

# Robert Hayes' Weekly Newspaper Column

Robert Hayes (WIPP), RPSD member, has taken on a new mantle, that of a journalist. He has a weekly column in the local newspaper in Hobbs, New Mexico. In addition, the Oklahoman (daily paper for Oklahoma City) has found his articles of sufficient quality to post them on their newspapers blog site. Rob is to be commended for taking it on himself to educate the public on matters of radiation and radioactivity. The online articles can be found at <a href="http://blog.newsok.com/science-and-technology">http://blog.newsok.com/science-and-technology</a>. Among the latest online articles are:

- Radiation sterilization of food and items (May 11, 2012)
- How to safely handle radioactive contamination (May 5, 2012)
- How to safely handle radioactive materials (April 28, 2012)
- Understanding radioactive material shipments (April 21, 2012)
- For the love of neutrons (April 16, 2012)



# Radiation Safety Information Computational Center (RSICC): 50 Years of Serving and Supporting the Nuclear Research and Development Community

The Radiation Safety Information Computational Center (RSICC) originated as the Radiation Shielding Information Center (RSIC) in

November 1962 at the behest of Dr. Alvin Weinberg who was serving in 1961 on President Kennedy's Panel of Science Information that produced the seminal report entitled "Science, Government and Information: The Responsibilities of the Technical Community and the Government in the Transfer of Information" in January of 1963. From the deliberations to produce the so called Weinberg report came the recognition that information analysis centers such as RSIC were critical components of the research and development that supported scientific inquiries because such centers would not only acquire, select, store and retrieve scientific information for the research community but would also evaluate, analyze and synthesize the body of information that is essential for scientific debate and deliberation.

RSIC was originally created to be a specialized information analysis center for radiation shielding with applications in nuclear propulsion systems, nuclear reactors, space power systems, weapons effects, accelerators and radiation encountered in space. RSIC compiled and synthesized codes and data to support this broad application of knowledge for radiation shielding. In its early days, RSIC was sponsored by the U. S. Atomic Energy Commission (USAEC), the National Aeronautics and Space Administration (NASA) and the Defense Atomic Support Agency (DASA). RSIC sponsors operated under the guiding principle that the open exchange of scientific information and data was critical to the advancement of scientific inquiry through interchange of ideas and criticisms that accelerate scientific progress. This altruistic philosophy which shaped the early operations of RSIC has remained a guiding principle for the organization to date. Although in its early days nearly 85% of RSIC's services were in support of government-related work, RSIC provide services to universities, private firms and foreign research institutes as well.

In 1996, RSIC became the Radiation Safety Information Computational Center (RSICC) to reflect the breadth of the scientific and technical fields supported by the center. Over time the activities of RSICC had expanded beyond shielding to include more applications in nuclear safety and transport analyses. Consequently, the sponsorship and support for RSICC has expanded to include the U.S. Department of Energy, the U.S. Nuclear Regulatory Commission, the National Nuclear Security Administration, the Department of Homeland Security, and private industry. RSICC has maintained close collaborations with foreign institutes and in particular has maintained a relationship with the Nuclear Energy Agency Data Bank (NEADB) of the Organization for Economic Cooperation and Development (OECD) and Japan's Research Institute of Science and Technology (RIST) since its inceptions. This broad support for the

global research community remains a critical activity for RSICC. To facilitate the broad distribution of information, codes and data RSICC engaged in sponsorship of seminars, workshops and conferences both domestically and internationally. Seminars and conferences provided the opportunity for communication of theory, data and methods development while the workshops provide an opportunity for the scientific community to exercise the theories, data and codes. RSICC has been one of the sponsors of the International Conference on Radiation Shielding (ICRS) for over 40 years. RSICC also announces and organizes a variety of workshops in collaboration with code and data developers and in particular with the developers of MCNP and the SCALE code system.

The fundamental service to collect, archive, evaluate, synthesize and distribute information, data and codes has remained and will continue to be a priority for RSICC along with open and close collaboration with international organizations in particular the NEADB and RIST. RSICC currently supports over 21,000 customers of which nearly 8500 of those are from domestic (78%) and foreign (22%) universities. RSICC is the custodian of nearly 2200 codes, data and auxiliary tools that have been gathered from national and international laboratories, universities and private industry to be made broadly available to the research community. RSICC has provided an important service to the nuclear research community for the past 50 years and looks forward to continuing this service for many more years to come. With the aging of our nuclear expertise worldwide and the growing interest in nuclear technology in the developing world, the services provided by RSICC will remain a necessity to ensure that the next generation of scientists and engineers benefit from the knowledge obtained by the nuclear research community over the past 50 years and to ensure that nuclear technology expansion in the developing world benefits from this knowledge as well.

Timothy E. Valentine, Ph.D. Director, Radiation Safety Information Computational Center Reactor and Nuclear Systems Division, Oak Ridge National Laboratory

### **Dose Conversion Coefficient News**

The International Commission on Radiological Protection issued ICRP Publication 116 earlier this year, although it has a release date of 2010. The publication is entitled *Conversion Coefficients for Radiological Protection Quantities for External Radiation Exposures*. This set of recommended conversion coefficients supersedes ICRP Publication 74/ICRU Report 57 *Conversion Coefficients for Use in Radiological Protection Against External Radiation*. ICRP 116 provides fluence-to-dose-conversion coefficients for both effective dose and organ absorbed doses for various types of external exposures that are consistent with the 2007 Recommendations of the ICRP (ICRP Publication 103). Recall that the value of some of the organ weighting factors as well as the number of organs in the computation of effective dose were changed in ICRP 103

and that the neutron radiation weighting factor was reduced by a factor of approximately two over the thermal to 1 MeV energy range. The neutron radiation weighting factor was also decreased above 100 MeV. The conversion coefficients were all computed using the official ICRP/ICRU reference voxel phantoms (ICRP Publication 110). No dose conversion coefficients were provided for operational quantities, e.g. ambient dose equivalent and personal dose equivalent. The operational quantities are now under review by the International Commission on Radiation Units and Measurements (ICRU). In ICRP 116, conversion coefficients were computed for the following set of particles for monoenergetic beams in idealized whole-body irradiation geometries (antero-posterior, postero-anterior, left lateral, right lateral, rotational, and fully isotropic):

- Photons (10 keV 10 GeV)
- Electrons (50 keV 10 GeV)
- Positrons (50 keV 10 GeV)
- Neutrons (0.001 eV 10 GeV)
- Protons (1 MeV 10 GeV)
- Helium Ions (1 MeV/u 100 GeV/u)

### **Workshop on Computational Medical Physics**

### September 2, 2012 at Nara Prefectural New Public Hall, Nara, Japan

Organizers: M. Ferenci, R. Howell, B. Kirk, W. Newhauser, T. Sato, P. Vaz, S. Yonai

The Workshop will be imbedded in the 12th International Conference on Radiation Shielding (ICRS-12, <a href="http://www.icrs12.org">http://www.icrs12.org</a>) and 17th Topical Meeting of the Radiation Protection and Shielding Division of the American Nuclear Society (RPSD-2012)

### **Workshop Program** (preliminary, 4 to 5 papers per session will be accepted)

08:30-09:00 Opening keynote - "CMP: state-of-the-art, from the physics to the clinical environment"

09:00-10:40 Session 1 - Patient and Personnel Protection in Diagnostic Imaging and Radiation Therapy (Organizers: W. Newhauser, M. Ferenci, R. Howell)

10:40-11:00 Coffee Break

11:00-12:30 Session 2 – Benchmarks (Organizers: B. Kirk, S. Yonai)

12:30-13:00 Keynote on "CMP and TPS: a perspective from the industry and manufacturers" 13:00 – 14:00 Lunch

14:00-15:40 Session 3 – State-of-the-art on Computer Programs for Medical Physics calculations (Organizers: B. Kirk, T. Sato, P. Vaz)

15:40-16:00 Coffee Break

16:00-16:45 Panel discussion – "CMP: Development and Utilization of Voxel Phantoms" (several panelists, 5 ' presentations from MPs, MDs, industry, etc.)
16:50-17:00 Closing



### September 2-7, 2012, Nara Japan

### http://www.icrs12.org/

This 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. It is one of the premier international radiation shielding events, regularly drawing hundreds of the world's top scientists and engineers.

### **Topics:**

Special Session: Accident of Fukushima Nuclear Power Plant and Its Influence

- Outline of the power plant accident
- Radiation and radioactivity monitoring in the surrounding environment
- Environmental assessment and recovery
- Dose evaluation to workers and the public
- Decommissioning and waste disposal
- Future nuclear and radiation safety improvement

Fission Reactor Facilities **Fusion Reactor Facilities** Fuel Cycle Facilities Transportation and Storage Issues Waste Management Facilities Accelerator Facilities **Medical Facilities** Aircraft Dosimetry and Space Technology Medical Applications **Industrial Applications** Shielding Experiments and Benchmarks Source Term Measurement and Evaluation Activation Measurement and Analysis Standardization of Radiation Field and Measurement Monte Carlo Methods and Applications **Deterministic Methods and Applications Empirical Methods and Applications** Visualization and User Interface Nuclear Data

Advanced Phantoms
Shielding Materials
Radiation Detections and Measurements
Radiation Protections
Radiation Dosimetry
Radiation Risk Issues
Decommissioning
Clearance
Environmental Assessment
International Collaboration

# **Radiation Safety Officer Training for Laboratory Professionals**

June 4 - 8, 2012 Boston, MA

https://ccpe.sph.harvard.edu/RSO

This 40-hour training program is specifically designed to train researchers and laboratory professionals with the skills necessary to implement a radiation protection program in the biotechnology, university, hospital, or medical laboratory setting.

### TMS Shortcourses

http://www.tmscourses.com/

### **Neutron Detection and Measurement**

October 1-5, 2012 Fort Lauderdale, FL

Since neutrons are, primarily, detected based on photons and charged particles produced by neutron interactions, a neutron detection course should cover the fundamental concepts of neutron interactions as well as those of gammas and charged particles. In addition to interactions, the course will cover all methods of neutron detection; methods for determination of neutron energy; basic concepts of radiation counting statistics; principles and operation of common neutron detectors; specialized neutron detectors, and neutron dosimetry and dosimeters. The course stresses the development of a basic understanding of the principles of operation of neutron detectors and dosimeters, and helps develop an ability to inter-compare and select instrumentation best suited for different applications. It will provide an opportunity for those new to the field to gain a broad perspective of measurement options, and for practitioners to refresh their knowledge in areas outside their own specialties.

### **Principles of Radiation Shielding**

Being Scheduled for Late 2012 or Early 2013.

This course focuses on the fundamentals of the production and interaction of ionizing radiation with matter and on how to use these fundamental properties to estimate and reduce radiation doses in practical situations. Simplified analytical and computer-based methods are presented for estimating doses from gamma rays, neutrons, beta-particles and alpha particles. Both the similarities and differences in shielding methods for different types of radiation are presented. The application of fundamental shielding principles to a wide variety of important radiation protection problems is emphasized. In addition, special approximate techniques applicable for a particular radiation or special geometry are also reviewed. The course is based on the widely used textbook "Radiation Shielding" by Profs. Shultis and Faw. This text and additional supplementary material will be provided to all course registrants.

### **2011-2012 RSPD Officers**

Chair	Arzu Alpan Westinghouse Electric Company alpanfa@westinghouse.com	Vice-Chair	Nolan E. Hertel Georgia Institute of Technology nolan.hertel@nre.gatech.edu
Secretary	Scott W. Mosher Oak Ridge National Laboratory moshersw@ornl.gov	Treasurer	Joel M. Risner Oak Ridge National Laboratory risnerjm@ornl.gov

### **Executive Committee**

Shaheen Azim Dewji, Georgia Institute of Technology, shaheen.dewji@gatech.edu (2012)

Wayne D. Newhauser, Univ. of Texas M.D. Anderson Cancer Center,

wnewhauser@mdanderson.org (2012)

Arkady Serikov, Karlsruhe Institute of Technology (KIT), arkady.serikov@kit.edu (2012)

Robert C. Singleterry, NASA, robert.c.singleterry@nasa.gov (2012)

Glenn E. Sjoden, Georgia Institute of Technology, sjoden@gatech.edu (2013)

Steven J. Nathan, SRS, Steven. Nathan@srs.gov (2014)

Douglas E. Peplow, ORNL, peplowde@ornl.gov (2014)

Erik F. Shores, LANL, eshores@lanl.gov (2014)

Martin R. Williamson, Y-12 National Security Complex, williamsonmr@y12.doe.gov (2013)

Note: The year in parenthesis indicates the end of their term.

# Liaisons and Ex-Officio Executive Committee Members

### **Ex-Officio**

Charlotta E. Sanders, University of Las Vegas, NV, sander59@unlv.nevada.edu

Michaele Brady Raap, PNNL, Michaele.BradyRaap@pnl.gov

### ANS Staff Liaison

Sharon S. Kerrick, skerrick@ans.org

### **ANS Board Liaison**

Joe F. Colvin, jfc@nei.org

### **RPSD Liaison to YMG**

Ahmad Ibrahim, University of Wisconsin-Madison, amibrahim@wisc.edu

# **Standing Committee Membership**

Committee	Chair	Members
Program	Eric Burgett (ISU) <a href="mailto:burgeric@isu.edu">burgeric@isu.edu</a>	Arzu Alpan, Michael Fensin, Steven Nathan, Arkady Serikov
Membership	Arzu Alpan (Westinghouse) alpanfa@westinghouse.com	Janice Arwood, Shaheen Dewji, Nolan Hertel
Finance	Joel Risner (ORNL) <u>risnerjm@ornl.gov</u>	Arzu Alpan, Nolan Hertel, Scott Mosher, Douglas Peplow
Honors and Awards	Martin Williamson (Y-12) williamsonmr@y12.doe.gov	Arzu Alpan, Eric Burgett, Joel Risner
Planning	Nolan Hertel (Georgia Institute of Technology) <a href="mailto:nolan.hertel@me.gatech.edu">nolan.hertel@me.gatech.edu</a>	Arzu Alpan, Joel Risner, Glenn Sjoden
Newsletter and Publications	Nolan Hertel (Georgia Institute of Technology) <a href="mailto:nolan.hertel@me.gatech.edu">nolan.hertel@me.gatech.edu</a>	Arzu Alpan, Eric Burgett, Scott Mosher,
Website	Tim Cahill (Georgia Institute of Technology) tcahill3@mail.gatech.edu	Arzu Alpan, Scott Mosher, Erik Shores
Students and Young Members	Tim Cahill (Georgia Institute of Technology) <a href="mailto:tcahill3@mail.gatech.edu">tcahill3@mail.gatech.edu</a>	Arzu Alpan, Shaheen Dewji, Nolan Hertel, Ahmad Ibrahim,
Bylaws & Rules	Erik Shores (LANL) <a href="mailto:eshores@lanl.gov">eshores@lanl.gov</a>	Arzu Alpan, Nolan Hertel
Scholarship	John Poston (Texas A&M University) <u>j-poston@tamu.edu</u>	David Anderson, Robert Grove
Benchmarks	Dick Amato (Retired, Bettis) <a href="mailto:padamato@comcast.net">padamato@comcast.net</a>	Arzu Alpan, Glenn Sjoden

The RPSD newsletter is issued twice a year, in spring and fall. RPSD newsletters are available at <a href="http://rpsd.ans.org/news/news.html">http://rpsd.ans.org/news/news.html</a>. If you have any comments on the RPSD newsletter, or would like to contribute an article for the upcoming newsletter (Fall 2012), please contact either the RPSD Vice-Chair or the Chair.