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Treasure

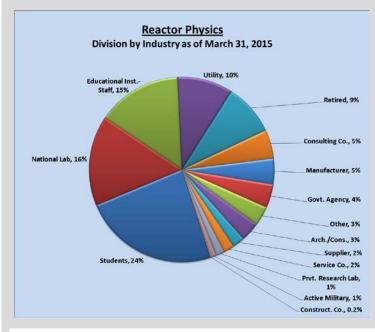
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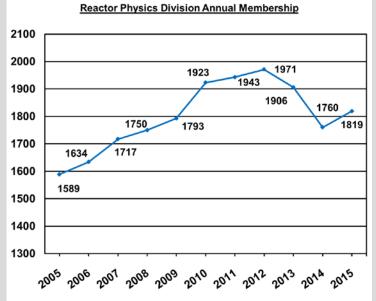
Treasurer's Report

The Reactor Physics Division is fully committed to reinvest its healthy budget to support brilliant students that will one day become leaders in the nuclear community. In 2014, \$30,000 were disbursed as first year contribution to the second RPD endowed undergraduate scholarship (the Rudi J.J. Stamm'ler scholarship) with an additional \$3,500 for student support at various conferences. The 2014 closing fund balance amounted to \$42,490. In 2015, \$6,000 has been disbursed for the first of five yearly payments towards the endowment of the Rudi J.J. Stamm'ler scholarship, and \$1,000 has been contributed as student support for the ANS Annual meeting. RPD will receive a share of profits equivalent to \$2,000 as part of its cosponsorship of ANFM 2015 (thanks to the ANFM organizing committee!). With additional funding from the yearly subscription, the projected budget at the end of 2015 remains healthy, in excess of \$38,000.

Membership

A pie chart showing the makeup of the RPD membership is shown below, with the trend of yearly subscriptions given further down in terms of RPD membership.







June 2015
Reactor Physics Division Newsletter

Arzu Alpan, Editor

RPD website: http://rpd.ans.org/



ANS Reactor Physics Division

SPRING ISSUE June 2015

A newsletter of the ANS Rector Physics Division

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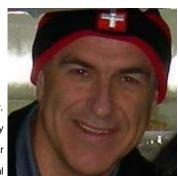
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A Message from the Chair

By Ron Ellis ellisri@ornl.gov

It has been an honor to serve as the Chair of the Reactor Physics Division over the past year. I would like to take advantage of this opportunity in this latest RPD Newsletter to use my "Message from the Chair" to provide an overview of the status, goals and activities of our division. With about 2000 members, we are one of the larger of the 22 ANS professional divisions.



Reactor Physics Division exists as a service and technology organization formed to serve the needs of its membership within the scope and under the leadership of the American Nuclear Society. RPD is not a proactive advocacy organization for the nuclear industry. Rather, our mission statement provides that we as a division seek to promote the advancement of theoretical, applied, and experimental research in reactor physics, and a better understanding of the fundamental physical phenomena characterizing nuclear reactors and other nuclear systems. RPD seeks a better understanding of reactor operations and in-core fuel management through the development and application of fundamental tools. The division supports the testing of tools and data in reactor experiments, and encourages the improvement in basic physical data.

The RPD Chair is also a member of the Professional Divisions Committee (PDC), as are the chairs of the other divisions. PDC is a very active national committee which coordinates the activities and governance issues affecting all the divisions and ANS. During each of the two national ANS meetings each year, there is a PDC workshop and a PDC meeting. The PDC meetings include representatives of all the professional divisions as well as ANS national officers and ANS board members. During the past year, major activities of the PDC include the vote and consultation process associated with the establishment of the Nuclear Nonproliferation Policy Division from the interim Nuclear Nonproliferation Technology Group. Also, in conjunction with the senior

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ANS executives and officers, a campaign was completed last Fall in which the messages, letters, and feedback was provided to the EPA to support what is called "Nuclear Equality" in which nuclear power was not given a negative standing with respect to other modes of power generation.

At the November 2014 ANS National Meeting, RPD and three other division chairs were called upon to give detailed presentations to the ANS Board of Directors on the division status and metrics of performance. The RPD presentation was well received by the Board.

One of the most visible activities of RPD is the organization and implementation of series of technical sessions at the two national ANS meetings. In addition, RPD partners with other professional divisions and organizations in other topical meetings and events: the biennial PHYSOR meetings (RPD topical meeting on advances in reactor physics), the M&C topical meetings, and the Advances in Nuclear Fuel Management (ANFM) (co-sponsored by FCWMD) meetings. During this past year, a number of important and successful topical meetings took place, sponsored or co-sponsored by RPD. PHYSOR2014 was held in Kyoto, Japan, from September 28 – October 2, 2014. ANFM2015 took place from March 29 – April 1, 2015, co-sponsored by RPD and FCWMD. M&C2015 was held from April 19-25, 2015, co-sponsored by MCD and RPD. In addition to the topical meetings, RPD continues to have a good turnout and participation in the ANS Annual and National Meetings.

These meetings with their regular and special technical sessions provide and showcase the technical content that highlights the ongoing work in our area of the nuclear energy field. A lot of effort, planning, and devotion to reactor physics is invested by the RPD program committee and many other volunteers to make these sessions successful. I thank my colleague Alex Stanculescu, Chair of the RPD Program Committee, and the members of the Program Committee review team, for the review and organization of the RPD papers and technical sessions and panels. It is this area where RPD can use most help from our membership as technical reviewers, session and panel organizers, and session chairs. We are always seeking interested and talented people to become involved with our division!

Education and the support of student activities and scholarship are of key in the development and involvement of the next generation of reactor physicists and nuclear engineers. Accordingly, RPD supports student participation in technical meetings, both by providing support to students attending national and topical meetings and by supporting student conference meetings with both financing and professional participation. RPD is working with ANS national leadership and other groups in efforts to engage college students in division activities at all levels. The division annually awards a graduate scholarship (the Henry-Greebler Scholarship) to a deserving student pursing a graduate degree in research related to Reactor Physics. RPD has recently established a second scholarship, the endowed Rudi Stamm'ler Undergraduate Scholarship, which was awarded for the first time this Spring.

I thank our RPD Scholarship Committee Chair Ben Forget and the members of the two scholarship review committees for their hard work and input into these important activities. RPD continues to be a big supporter of other student related activities and continues to provide support for the ANS Student Conference (recently held at Texas A&M). RPD continues to provide funds to help students travel to and participate in the ANS Annual and ANS National meetings.

The staff of the national ANS organization plays a significant role in public education, advocacy and policy. However, while ANS drives the overall programs, they rely on the professional divisions for technical contributions. The divisions often provide subject matter experts as resources for external organizations or media relations, drawn from within the division. Activities of the RPD division are led and coordinated by the elected officers and members of the RPD Executive Committee. Starting this past Fall, ANS national has implemented steps and utilities to better enable the assessment of division metrics; in particular, computer archive areas have been established so that the required division documents, spreadsheets, and other materials are to be uploaded. The RPD Executive Committee meets twice a year at national meetings and maintains the division budget, spending and leads the various tasks.

RPD is also responsible for coordinating efforts in support of a number of awards that are intended to recognize the professional contributions of its membership. These include the Eugene P. Wigner Reactor Physicist Award and nomination of ANS Fellows.

For more background and current information about RPD, please visit our webpage, which is undergoing continual upgrade and improvement, at http://rpd.ans.org. Each year, the current RPD Vice Chair oversees the maintenance and upgrade of the RPD Website. Another relatively new outreach effort implemented by the RPD leadership team is a Facebook group (Reactor Physics Division of the American Nuclear Society); there are currently about 550 members and everyone is encouraged to join: it is a popular venue for discussion and news of items of interest to the reactor physics community.

As discussed in detail in the last RPD Newsletter, RPD experts, as well as those from other professional divisions, have worked diligently in the development and affirmation of ANS National Standards. Working groups formed of volunteers from the RPD membership are formed to create the text of such standards, and to make decisions about a standard's maintenance and respond to requests for clarification or interpretation. RPD volunteers lead the ANS-19 Standards Committee "Physics of Reactor Design" which encompasses 12 standards (nine active standards, and three proposed standards) maintained by working groups.

I hope I have provided a little insight and some interesting details into the technical and governance activities for our division. I will sign-off by encouraging participation and volunteering from our membership! The RPD division Executive Committee meeting will be held at the upcoming ANS 2015 Annual Meeting in San Antonio from 4-6 pm on the Sunday preceding the meeting (June 7) and is open to all (space permitting). The RPD Program Committee meeting, which embodies the technical essence of ANS meetings, will also be held on Sunday, from 2-4 pm. Before this meeting, the RPD Goals & Planning meeting (run by the RPD Vice Chair) will be held from 1-2 pm on the Sunday. The continuing update for the RPD One Year and Five Year Plans are performed at this meeting. All three meetings are conveniently held in the same meeting room (please see the final meeting program for details). These meetings provide activities and venues in which you can see the opportunities for participation and become involved as a volunteer. The only requirement for active participation is membership in the ANS and in the RPD. Existing and especially young members are encouraged to become involved in RPD governance and technical activities and adventures!

The 2015 election for RPD had a good participation. A full slate of candidates with contested positions is good for RPD as it ensures that RPD membership has influence on the outcome. The succession plan for RPD entails the rotation of Secretary to Treasurer, to Vice Chair, to Chair. The Chair becomes the chair of the RPD nominating committee for the following year.

After the conclusion of the ANS 2015 Annual Meeting on June 11, the new slate of RPD Officers assume their roles. Pavel Tsvetkov will succeed me as Chair of RPD, and together with the new and rotated RPD Officers, will strive hard to continue our tradition of service and excellence to the RPD membership and ANS. Fausto Franceschini will become the Vice Chair, Arzu Alpan will become the Treasurer, and Todd Palmer is the newly-elected RPD Secretary.

Website

By Pavel Tsvetkov tsvetkov@tamu.edu

The division website is being reviewed for outdated content which is being replaced or removed once identified. The website is also undergoing review to streamline the design reducing the burden of updating all parts of the website thus reducing the challenge of keeping it up to date. By the end of summer 2015 it is expected to substantially revise the content relying substantially on our newsletters. The division archive space is being reviewed and utilized for our legacy content.

Program Committee

By Alexander Stanculescu alexander.stanculescu@inl.gov



Outgoing and New Members

There were no outgoing or incoming members of the Technical Program Committee since the Autumn 2014 Newsletter.

My renewed gratitude and appreciation go to the RPD reviewers, session chairs, special session organizers and panel organizers for their enthusiasm, reliability and unwavering effort. They are the foundation of the many accomplishments achieved by our Division.

ANS 2014 Winter Meeting, Anaheim, CA

The 2014 Winter Meeting was held in Anaheim, California (November 9-13, 2014). A total of 64 papers, out of the 65 submitted to the RPD, have been accepted and presented in nine technical sessions (three standing sessions, one tutorial, one panel, and four special oral sessions). The overall technical quality was high, and all the oral sessions, the panel and the tutorial enjoyed good attendance.

The three standing RPD sessions for the 2014 Winter meeting featured 36 papers divided among "Reactor Physics General I, II and III" (20 papers), "Reactor Physics Analysis Methods I and II" (11 papers), and "Reactor Physics Design, Validation and Operating Experience" (5 papers). In addition there have been four special sessions, one special tutorial, and one special panel with 28 papers overall. The special sessions were: "Core Design Perspective on Accident Tolerant Fuels". organizer Massimiliano Fratoni (3 papers), "Advances in Fast Reactor Design and Concepts", organizer Florent Heidet in collaboration with FCWMD (6 papers), "Physics of Compact Reactors for Terrestrial and Space Applications", organizer John Bess in collaboration with ANSTD (2 papers), and "Physics and Engineering Analysis of Sub-Critical Driven Systems", organizer James F. Stubbins in collaboration with FCWMD, AAD and FED (12 papers). The special tutorial, co-sponsored by the RPD, the ANSTD and the RPSD was "Tutorial on Radiation Protection and Shielding in Aeronautics and Space Applications". The special panel, co-sponsored by the RPD and the NCSD, was "New Nuclear Data Formats and Processing Capabilities", organizers Jeremy Conlin and Brian Kiedrowski (5 papers).

RPD Best Paper Award (ANS 2014 Winter Participation in RPD Program Committee Meeting)

Many excellent papers were submitted, and many excellent presentations were given at the ANS 2014 Winter Meeting. A team of peers determined through our review and judging process that the paper/presentation "Studies of Gas-Cooled Pressure-Tube Blanket Lattices for Hybrid Fusion-Fission Reactors with Thorium-Based Fuel". by Blair P. Bromley, Canadian Nuclear Laboratories, blair.bromley@cnl.ca (Transactions of the American Nuclear Society, Volume 111, Number 1, November 2014, Pages 1312-1316) was particularly good and deserving of this Reactor Physics Division award of distinction. Congratulations to the recipient!

ANS 2015 Annual Meeting, San Antonio, TX

Fifty-four RPD papers were submitted to the ANS 2015 Annual Meeting, of which 53 were accepted. The accepted submissions were assigned to the three standing RPD sessions "Reactor Physics General I, II, and III" (15 papers), "Reactor Physics Design, Validation, and Operating Experience I and II" (9 papers), and "Reactor Analysis Methods I and II (12 papers), as well as to three Special Sessions, viz. "Advanced Monte Carlo Methods for Reactor Physics Analysis I, and II", cosponsored with MCD (9 papers), "Progress in Students Research and Design Projects", co-sponsored with AAD, ANSTD, ETWDD and FEDI (2 papers), "Small Modular Reactors (SMRs): Reactor Physics and Fuel Cycle", co-sponsored with FCWMD (5 papers), and to one special panel "LWR Fuel Reliability" (1 paper).

Special Sessions at Upcoming 2015 ANS Winter Meeting

The venue of the 2015 ANS Winter Meeting (November 8 - 12, 2015) will be Washington, DC. So far, the RPD has submitted four proposals for special sessions at this Meeting: "Advances in Fast Reactor Designs and Concepts" (organizers Won Sik Yang and Florent Heidet), "Compact Reactors for Terrestrial and Space Applications" (organizers Blair Bromley and John Bess, co-sponsors ANSTD, OPD, THD and AAD), "Nuclear Data Experiments, Evaluations and Benchmarks" (organizers Yaron Danon and Rian Bahran, co-sponsors AAD and NNPD), "Student Design Projects in Nuclear Science and Technology" (organizer Blair Bromley, cosponsors ETWDD, ANSTD, AAD and FED)

Should you wish to propose an RPD special session for this (or one of the future ANS Annual or Winter Meetings) please submit your request (using the appropriate ANS form Attachment V Request for Approval of Division-sponsored Special Program (alexander.stanculescu@inl.gov)

Activities

I would like to commend all RPD members who are working in support of the PHYSOR 2016 topical meeting that will be held May 1-5, 2016 in Sun Valley, Idaho (see also dedicated article in this Newsletter)

Our Division can only be successful thanks to the active involvement of its members. I would like to encourage you to continue contributing to the Division's success by submitting technical papers, organizing special sessions, reviewing papers, chairing sessions, and by becoming actively engaged with both Program Committee and general RPD governance activities.

ANS Reactor Physics Division Program Committee

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Reactor Physics Standards

By Dimitros Cokinos

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- Work continued for the revision of ANS-19.4, "Acquisition and Documentation of Power Reactor Physics Reference Measurements for Nuclear Analysis Verification".
 - The work is carried out under the leadership of its Working Group Chair, Ed Knuckles. This standard is significant as a benchmarking tool for the analyst in verifying the success of power reactor calculations.
- The final revision of "ANS-5.1, "Decay Heat Power in Light Water Reactors has been completed, and published as the latest ASNSI/ANS standard.
- International Standards: Two of our Reactor Physics standards, ANSI/ANS-19.1, "Steady State Neutronics Methods for Power Reactor Analysis" and ANSI/ANS-19.6.1, "Reload Startup Physics Tests in PWRs" have been adopted by the International Organization on Standardization (ISO), and are undergoing the usual formalities of multiple administrative reviews. A third ANSI/ANS standard, ANSI/ANS-19.10, "Fast Neutron Fluence in the Pressure Vessel" has also been adopted by the ISO and a French group, with U.S. input, is revising and expanding it.

Honors & Awards

Early Career Reactor Physicist Award

This award recognizes major technical accomplishments by a person in the field of reactor physics, who at the time of the nomination, is 39 years old or younger. Eligibility requirements and other details about the new award can be found on the ANS website under the heading of Honors & Awards / Division Administered Awards.

Scholarships

By Benoit Forget

bforget@mit.edu

This year, the reactor physics division awarded the first Rudi J.J. Stamm'ler undergraduate reactor physics scholarship. As many of you know, Rudi was a pioneer in reactor physics lattice methods and also co-authored a fundamental book on the topic (Methods of Steady-State Reactor Physics in Nuclear Design). It is with great pleasure to award the 1st Rudi J.J. Stamm'ler undergraduate reactor physics scholarship to Travis Labossiere-Hickman of the

University of Tennessee - Knoxville.

As in previous years, the reactor physics division also awards the Allan Henry / Paul Greebler graduate reactor physics scholarships. We received many exceptional candidates from which the committee selected Richard Vega of Texas A&M University as this year's recipient.

Please join me in congratulating both Travis and Richard, and also please encourage undergraduate and graduate students to apply for the reactor physics scholarships next year.

PHYSOR 2016

www.physor2016.org



The biennial 2016 Physics of Reactors

(PHYSOR) RPD Topical Meeting will be held in Sun Valley, Idaho, May 1-5, 2016. The PHYSOR series of conferences are international forums assembling expertise related to reactor physics and related topical areas. PHYSOR 2016: Unifying Theory and Experiments in the 21st Century, will be focused on both modeling/simulation and experimental aspects of reactor physics and exploration of common aspects and requirements of the two focus areas. The meeting will also include plenary discussions, technical tours, workshops, and sessions in other topics relevant to the physics of nuclear reactor systems.

Sun Valley is a resort city tucked within the mountains of south central Idaho, near the city of Ketchum. It sits at the edge of the Sawtooth and Challis National Forests, with

the Big Wood River, a fisherman's dream, running through the Wood River Valley. Tourists from around the world enjoy its skiing, hiking, ice skating, trail riding, tennis, and cycling. The elevation of Sun Valley Lodge is 5920 feet (1804 m) above



sea level. The Sun Valley Resort has been the location of a number of successful ANS Topical Meetings, including M&C 2013 and PSA 2015.

The Technical Program Committee for PHYSOR 2016 is soliciting 1500-word extended summaries, due by July 31, 2015, that will be reviewed and judged for relevance, technical significance, and completeness of the work. Those authors whose summaries are accepted will be invited to submit a full paper. Full papers will be given a quick review of formatting and general readability, but will not be re-reviewed technically. This is intended to allow publications that describe the state of research near the time of the meeting itself. For more information on the meeting and paper submission and requirements, please visit the conference website at www.physor2016.org.



International Conference on Nuclear Data for Science and Technology (ND2016)

http://www.nd2016.eu/

ND2016 is the primary conference for the advancement of nuclear data in the interest of both science and technology. It addresses all important active fields of investigation: fundamental nuclear physics, astrophysics, nuclear energy, nuclear medicine, nuclear non-proliferation, safeguards and arms control. ND2016 will be held in Bruges, Belgium, September 11 -16, 2016.

IMPORTANT DATES & DEADLINES

- Abstract submission deadline: January 17, 2016
- Registration open: November 17, 2015
- Early registration deadline: July 11, 2016

For up-to-date information about this conference, please visit http://www.nd2016.eu/.

ANFM 2015

Advances in Nuclear Fuel Management V March 29 - April 1, 2015 Hilton Head Island, SC

http://anfm2015.org

The 2015 edition of this meeting is the fifth in the series, held every six years. It has become a tradition to hold the meeting in early spring in sunny Hilton Head, South Carolina.

The total number of registrants was 125 (not including guests). 64 people were registered as speakers. Including the panel discussions, there were 20 technical sessions of 1.5-2 hours over 2.5 days. The conference had a low number of papers compared to the last conference (70 compared to 125 at the last conference), but panel discussions were added to compensate. The conference was a financial success, and RPD will receive almost \$2000 in proceeds.



M&C + SNA + MC 2015

Joint International Conference on Mathematics and Computation (M&C), Supercomputing in Nuclear Applications (SNA) and the Monte Carlo (MC) Method

http://mc2015.org

The Oak Ridge/Knoxville Section of the American Nuclear Society (ANS) hosted and sponsored the FIRST combined Mathematics and Computations (M&C) ANS topical, with Supercomputing in Nuclear Applications (SNA) and Monte Carlo (MC) 2015. The joint international conference was held at the Sheraton Music City in Nashville, Tennessee during the week of April 19-23, 2015. M&C is the latest in the series organized by the Mathematics and Computation Division of the American Nuclear Society. Prior to 2010, SNA and MC existed as separate conferences. In 2010, SNA and MC combined and held SNA+MC 2010 in Tokyo, Japan. This was followed by SNA+MC 2013 held in Paris, France.

The technical program consisted of plenary sessions, parallel oral presentation sessions, and poster sessions. There were also several workshops, special sessions, and roundtable discussions requested and organized by participants.

The plenary speakers included Charlie Fazzino, Manager of High Performance Computing for Exxon Mobil. The title of his talk was "2015 Supercomputing in Nuclear Applications - Oil and Gas Overview". The other plenary speaker was Jess Gehin, Director, Consortium for Advanced Simulation of Light Water Reactors, Oak Ridge National Laboratory (ORNL). His talk was titled "CASL: Progress on Light Water Reactor Modeling and Simulation and Plans for its Second Phase".

The conference attracted 360 attendees from 21 countries. The number of presentations was 250, with 2 no-shows. Two poster sessions were scheduled for Monday April 20, 2015 and Tuesday April 21, 2015. The latter was specific to advances in Monte Carlo software. A total of 13 workshops were held.

Contributing Sponsors

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M&C + SNA + MC 2015 Welcome Reception



M&C + SNA + MC 2015 Monday Plenary



M&C + SNA + MC 2015 Poster Session

Pictures from the 2014 ANS Winter Meeting









ANS Reactor Physics Division

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