

Reactor Physics Division

A Message from the Chair

Florent Heidet
fheidet@anl.gov

Dear friends and colleagues,

Six months ago, the main concern I was discussing with you in the RPD newsletter was the changes the American Nuclear Society was going through and how it was impacting the Reactor Physics Division. Now, we are all facing a more serious and more challenging situation with the COVID-19 pandemic which is forcing us to change our habits and rethink through many things we assumed granted.

As you know, ANS decided to take the 2020 ANS Annual meeting to a virtual mode rather than cancelling it. While we will be missing on the social and networking opportunities enabled through an in-person meeting, this meeting's format will still give us an opportunity to share with each other's progress we made in the field of reactor physics.

Regarding news specific to RPD, first, I would like to welcome the newly elected officers: **Amanda Lang** as vice-chair, **Matt Jesse** as treasurer, and **Chris Perfetti** as Secretary; as well as the new members to the Executive Committee: **Zeyun Wu, Christophe Demaziere, Paul Romano, Luis Leal, and Ben Betzler**. This year we were faced with a unique situation regarding succession of the RPD leader-

ship. Due to their professional and personal situations, our current Vice-Chair and Treasurer expressed concerns about having enough time to serve in the logical continuation of their roles (respectively as Chair and Vice-chair). As such, working with ANS HQ and the RPD Executive Committee, I was asked to continue as chair for a second successive year and Amanda Lang, our current secretary, to become vice-chair. These changes, while not following the traditional succession plan, should have no adverse impact.

On a less procedural note, I really want to share my excitement to be currently working in the field of reactor physics. We have been witnessing more and more programs aiming at building new reactors in the U.S. and around the world. This finally gives all of us a unique opportunity to leverage all the advances in knowledge, methods, and modeling & simulation tools that we have been developing over the last few decades and apply them to practical reactor designs. I am very hopeful that within 10 years we might



Florent is a group manager at Argonne National Laboratory, working on advanced reactor technologies. A benefit of having to work from home is spending more time with his family.

see a number of advanced reactors built, a few micro-reactors, and even possibly see nuclear at the center of space exploration programs. It is such a great time to be part of this effervescent community and hope you are seeing it the same way.

If you have any request or suggestions for RPD to better serve you, please do not hesitate to get in touch with any of the RPD officers.

I sincerely hope that you and your loved ones are staying safe.

Florent Heidet, RPD Chair

Officers 2020-2021

Florent Heidet –Chair
fheidet@anl.gov

Amanda Lang – Vice-Chair
amanda.lang@duke-energy.com

Matt Jesse – Treasurer
jesseema@ornl.gov

Chris Perfetti – Secretary
cperfetti@unm.edu

Todd Palmer – Immediate Past Chair
palmerts@ne.orst.edu

Get Involved!

The **RPD Executive and Program Committee** meetings are scheduled for **Friday June 12** starting at 3pm CDT:

RPD Executive Committee meeting: **3-4pm CDT**

RPD Program Committee meeting: **4-4:30pm CDT**

RPD PHYSOR 2022 bid presentation (part of the PC meeting): **4:30-6pm CDT**

[Meeting Link](#)

Meeting ID: 990 8185 2218

Attend the **ANS Business Meeting** on Wed. June 10 6:30-7:45 PM ET.

[Meeting Link](#)

Honors & Awards

Dimitrios Cokinos
cokinos@bnl.gov
 RPD Honors & Awards
 Committee Chair

EUGENE P. WIGNER REACTOR PHYSICIST AWARD

Members of the Reactor Physics Division are **invited to nominate** qualified candidates for the Eugene P. Wigner Award. This prestigious award was founded in 1990 to honor individuals who have made outstanding contributions to the advancement of the field of reactor physics. This award is presented to the winner during the ANS Winter

meeting. A complete description of the requirements for the nomination, including a list of past winners, can be found in the ANS website under the heading of Honors & Awards.

EARLY CAREER REACTOR PHYSICIST AWARD Nominate Now

This relatively new award was created to honor outstanding young reactor physicists, who at the time of their nomination are 39 years old or younger. This award is presented during the ANS Annual Meeting. As in the

case of the Wigner award, the winner presents the "ECRP Lecture. Winner of this year's ECRP Award is Professor Vladimir Sobes of the University of Tennessee.

The Reactor Physics Division welcomes nominations for the two awards, Wigner and ECRP

Deadlines

Wigner Award: April 1, 2021

ECRP Award: August 1, 2020

Executive Committee

(Terms Expiring June 2021)

Nicholas R. Brown
 nbrown49@utk.edu
 Stephanie A. Kempf
 sakempfne@gmail.com
 Dave J. Kropaczek
 kropaczekdj@ornl.gov
 Zach McDaniel
 modanizb@westinghouse.com

(Terms Expiring June 2022)

Nathan J. Roskoff
 roskofnj@gmail.com
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 Alireza Haghighat
 haghghat@vt.edu
 Hyung Jin Shim
 shimhj@snu.ac.kr

(Terms Expiring June 2023)

Zeyun Wu
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 Christophe Demaziere
 demaz@chalmers.se
 Paul Romano
 promano@anl.gov
 Luiz Leal
 luiz.leal@irsn.fr
 Benjamin Betzler
 betzlerbr@ornl.gov

Get Involved!

Contact cokinos@bnl.gov to volunteer to help with standards on Nuclear Data for Medical & Industrial Applications.

New to Working From Home?

Check out these [resources](#)

<http://rpd.ans.org/>

Reactor Physics Standards

Dimitrios Cokinos
cokinos@bnl.gov
 RPD Standards
 Committee Chair

ANS-19 continues to be a major contributor to the **International Organization for Standardization (ISO)**, a highly structured institution.

A number of our standards for reactor design have been undergoing revisions during the past several months. With the publication of ANS-19.1, "Nuclear Data Sets for Reactor Design and the completion of the revision of ANS-5.1, "Decay Heat Power in Non-Recycled Fuel",

the revision of two more standards is nearing the balloting stage. These are:

(1) ANS-19.3, "Steady State Neutronics Methods for the Analysis of Power Reactors". This standard has been adopted by the International Organization for Standardization (ISO) with the same title and designated as ISO-18075

(2) ANS-19.3.4, "Determination of the Thermal Energy Deposition Rate in Nuclear Reactors". This is an updated version of the previously revised, 2002

standard and is about to be voted on by ANS-19

Newly revised ANS-19.6.1, "Reload Startup Physics Tests for PWRs" has also been adopted by ISO with the same title and designated as ISO-18077.

Volunteers are needed to help develop the standard on *Nuclear Data for Medical and Industrial Applications*, designated as ANS-19.12. Potential participants must have a background in nuclear physics and nuclear data.

Scholarships

Benoit Forget
bforget@mit.edu
 RPD Scholarships Chair

The reactor physics division is proud to announce the winners of our two RPD sponsored

scholarships. Due to low turnout in undergraduate applications, both awards were given to graduate students.

Please join me in congratulating **Emily Vu of the University of Michigan** who is the recipient of

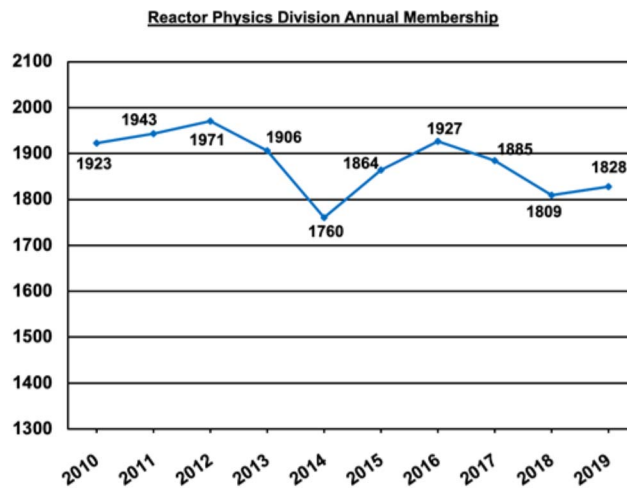
the Rudi J.J. Stamm'ler award, and **Miriam Kreher of the Massachusetts Institute of Technology** who is the recipient of the Allan Henry / Paul Greebler award.

Treasurer's Report

Germina Ilas
ilasg@ornl.gov
RPD Treasurer

The financials details received from ANS showed an RPD 2019 year-end balance of \$41,657. At the end of the first quarter for 2020 (as of March 31, 2020), the balance was \$39,704, reflecting the only expense that occurred in this quarter, of \$2,500 to support the 2020 ANS Student Conference, and the \$547 revenue allocation from membership fees. The RPD financial health will not be possible without all our member contributions.

The RPD membership continues to be strong, with 1828 members at the end of 2019 and showing an increase of



19 members compared to the previous year. At the end of 2019, RPD accounted for 20% of the total ANS membership, increasing its importance from 19.2% as it was in 2018. Whereas the ANS experienced

an overall drop of 3% in members in 2019, the RPD had a 1% increase. The RPD membership evolution over the years is shown in the figure.

PHYSOR 2022

PHYSOR 2022 bids have been submitted and the location of the 2022 meeting will be determined on Friday June 12.

4:30-6 PM
[Meeting Link](#)

Note that PHYSOR 2020 was cancelled due to COVID-19.

Advanced Reactor Demonstration Program

The US Department of Energy announced funding for the construction of [two demonstration advanced reactors](#) to be operational within the next 5-7 years.

NERD Act

Consider taking [two minutes](#) to take action on nuclear policy: specifically by supporting the NERD Act (Nuclear Energy Research and Development Act) which funds new nuclear fuels, advanced reactor demonstration, nuclear science education and more.

Treasurer's Report Prepared By:

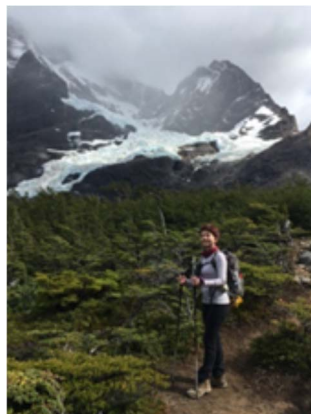
Germina Ilas

Germina is a senior R&D staff in the Neutronics Group, Reactor and Nuclear System Division at Oak Ridge National Laboratory. While not enjoying the wonderful group environment she is fortunate to be part of the science and engineering challenges we are working on together. She loves the outdoors' serenity. Her recent hiking adventure at the beginning of this year was to complete the W Trek and admire the breathtaking beauty of the peaks and glaciers in Southern Patagonia. Pictured at right.

Program Chair's Report

Pavel Tsvetkov
tsvetkov@tamu.edu
Program Chair

Unexpectedly, due to challenges imposed by the global pandemics, the ANS Annual 2020 meeting became a historical first-of-its-kind virtual meeting. Our Reactor Physics Division authors had to face a unique dilemma – present virtually or postpone till the winter meeting. Some au-



Treasurer Germina Ilas in Patagonia.

thors decided that it is better to postpone. However, we still maintain significant presence at the meeting with 35 papers in 9 standing and special sponsored and co-sponsored sessions. There are sessions on advancements in reactor physics methods, reactor design innovation, emerging advanced reactors for terrestrial and space applications. In particular, we like to recognize high-impact efforts reported in the special session on advancements towards the Transformational Challenge Reactor. On June 12, the Program Committee will be meeting in a joined virtual session with the Executive Committee to deliberate on the contemporary division issues. On of the topics on the agenda will be to decide the location and the organizing team for PHYSOR 2022 which will be domestic Class I meeting. This will be the 1st RPD meeting organized and hosted under the new topical meetings rules.

Despite all the efforts, the PHYSOR 2020 topical meeting in UK had to be cancelled to the emerging COVID19 threat. The open-access papers are hosted on the conference website as a courtesy to the community. The RPD would like to recognize and thank organizers of PHYSOR 2020 with a hope that they will have the opportunity to host one of the future PHYSOR conference. In addition to PHYSOR 2022 bids, on June 12, the program committee will be discussing a range of contemporary topics including upcoming meetings, membership, future virtual events, best paper selections as well as solicit proposals for future special sessions and other topics. We encourage all ANS and RPD members, who are interested to engage and contribute, to come and attend our division meeting on June 12 at 3 pm via ZOOM.

Summer 2020 Programs

The Summer 2020 American Nuclear Society Meeting is Virtual!

Register [here](#) for only \$199! During the meeting, be active on social media (Facebook, Twitter, Instagram) with these hashtags: **#ANSannual** and **#Countdownto2030**

Be sure to check out these RPD technical sessions:

Monday

12:00 – 2:10 PM Reactor Physics: General
2:30 – 4:15 PM Transformational Challenge Reactor

Tuesday

1:30 – 3:15 PM Reactor Analysis Methods I
3:35 – 5:20 PM Reactor Physics of Micro Reactors for Terrestrial & Space Applications I

Wednesday

11:00 – 1:10 PM Reactor Physics of Advanced Reactors
1:30 – 3:15 PM Reactor Analysis Methods II
3:35 – 5:20 PM Reactor Physics of Micro Reactors for Terrestrial & Space Applications II

Thursday

9:00 – 10:45 AM Reactor Analysis Methods III
11:15 – 1:00 PM Reactor Physics Design, Validation and Operating Experience

Introducing Our New Treasurer: Matt Jessee

Matt Jessee is a senior research and development staff member at Oak Ridge National Laboratory. He is a reactor physics geek, avid runner, golfer, and camper. His most recent COVID-19 boredom hobby is to learn Rubik's cube algorithms, with a goal to solve one under one minute. (Not quite there yet)

Thank you outgoing officers!

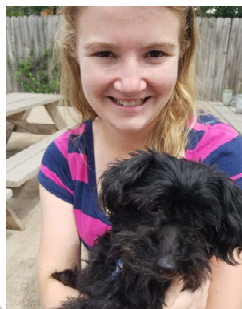
Huge shout out to our outgoing officers Anna Erickson and Germina Ilas! Thank you to our executive committee outgoing members: Sedat Goluoglu, Matthew Jessee, Javier Ortensi, and William Walters. **We appreciate your dedication and service to the Reactor**

Newsletter Prepared By:

Amanda Lang
Amanda.Lang@Duke-Energy.com

RPD Secretary (Incoming Vice Chair)

Amanda is a core design engineer at Duke Energy. She has been spending a lot of time going on walks with her work-from-home coworker, Petunia (pictured below).



RPD Committee Members

Bylaws & Rules

Chair: Arzu Alpan, Westinghouse

Ronald Ellis, retired
Sedat Goluoglu, University of Florida
Luiz Leal IRSN, France
Moussa Mahgerefteh, Exelon
Bojan Petrovic, Georgia Institute of Technology
Pavel Tsvetkov, Texas A&M University
William Walters, Penn State

Honors & Awards

Chair: Dimitrios Cokinos, Brookhaven National Lab.
Robert Little, Los Alamos National Laboratory
Farzad Rahnema, Georgia Institute of Technology
Charles Rombough, CTR Technical Services, Inc.
Paul Turinsky, North Carolina State University

Standards Chair: Dimitrios Cokinos, Brookhaven National Lab.

**Allan Henry/
Paul Greebler
Undergraduate Scholarship
Chair: Benoit Forget, MIT**
Dimitrios Cokinos, Brookhaven National Lab.
Thomas Downar, University of Michigan
Jess Gehin, Idaho National Lab.
Scott Palmtag, North Carolina State University
Rudi Stamm'ler Graduate

Scholarship

Chair: Benoit Forget, MIT
Mark DeHart, Idaho National Laboratory
Fausto Franceschini, Westinghouse
Florent Heidet, Argonne National Laboratory

RPD Committee Meetings

All Are Invited!

FRIDAY JUNE 12

RPD Executive Committee: 3-4 PM

RPD Program Committee: 4-4:30 PM

RPD PHYSOR bids: 4:30-6 PM

Connection info:

Meeting URL: <https://tamu.zoom.us/j/99081852218>

Meeting ID: 990 8185 2218

Dial: US: +1 877 853 5247 (Toll Free)

Program Committee

2017/2020

Cristian Rabiti
Florent Heidet
Alberto Talamo
Blair P. Bromley
Won Sik Yang
Nicolas Stauff
Manuele Aufiero

2018/2021

Andrea Alfonsi
Liangzhi Cao
Brandon Haugh
Dan Kotlyar
Alex Levinsky
Ben Betzler
Benjamin S Collins
Abdalla Abou Jaoude
Vefa Kucukboyaci
Zeyun Wu

