

American Nuclear Society

Reactor Physics Division Summer 2023 Newsletter

Officers

Matt Jessee – Chair
jesseema@ornl.gov

Chris Perfetti – Vice-Chair
cperfetti@unm.edu

Shane Stimpson – Treasurer
sgstimpson@bwxt.com

Abdalla Abou-Jaoude – Secretary
abdalla.aboujaoude@inl.gov

Amanda Lang – Past Chair
Amanda.Lang@duke-energy.com

ANS Winter 2023



Join us for the ANS Winter Meeting 2023 in Washington DC! The conference will be taking place November 12-15, 2023.

For more information visit:
<https://www.ans.org/meetings/wm2023/>

A Message from the Chair

jesseema@ornl.gov

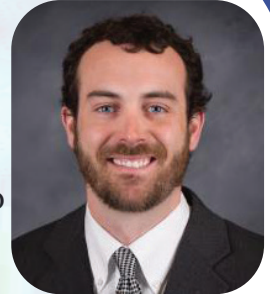
Hello RPD members,

I hope you are doing well. It is hard to believe that one year has come and gone since taking on the role as RPD Chair. While I am not sure much was accomplished during my tenure, I will highlight a few noteworthy items. First, PHYSOR 2024. The conference will take place April 21-24 in San Francisco. Please see the call for papers highlighted in the newsletter and make plans to attend. Second, our membership in RPD continues to grow, currently just shy of 1500 members, with a great mix of industry, national laboratories, universities and students. This membership number is reflection of the importance of our division to the overall ANS mission.

Lastly, I would like to welcome the newly elected officers: Chris Perfetti, in coming Chair, Shane Stimpson as vice- chair, Abdalla Abou Jaoude as Treasurer, and Ben Collins as Secretary; as well as the new members to the Executive Committee (list).

I hope you enjoy our newsletter updates on membership, upcoming events and meetings, and our technical programs within our national meetings. If you have any questions or would like to get engaged, please do not hesitate to reach out to me directly or anyone on our executive committee. I'd like to recognize our outgoing members of both the Executive and Program Committees, and thank them for serving our division.

Matt Jessee, RPD Chair



Electrion Results are In!

Please join us in welcoming the new incoming leadership team for the ANS Reactor Physics Division:

Christopher Perfetti – Incoming Chair
Shane G. Stimpson – Incoming Vice Chair
Abdalla Abou Jaoude – Incoming Treasurer
Ben Collins – Incoming Secretary

As always we are grateful for the contribution of previous officers to the coninuing success of our division. Special recognition goes to soon-to-be past chair Matt Jessee for his diligent leadership of RPD this past year.

A Message from the Incoming Chair

It is an exciting time to be a nuclear reactor physicist!

Vogtle Units 3 and 4 are coming online, the NRC is approving new and innovative reactor designs, and every day reactor physics researchers expand the horizon on our ability to model nuclear reactors. Nuclear has been the largest source of carbon-free energy in the US since 1984 and our legacy plants provide reliable, uninterrupted energy for millions of people. Simultaneously, demonstration plants are in the works for next-generation reactor designs that can greatly expand the energy applications that nuclear power serves.

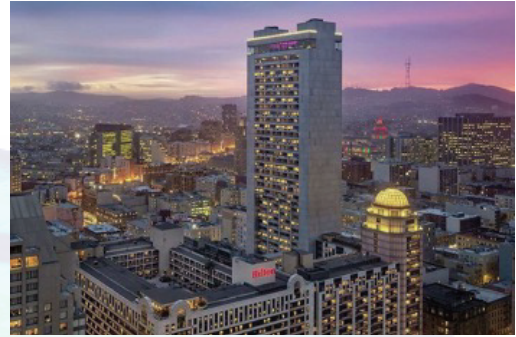


Prof. Perfetti with a future RPD Member

I am very excited to begin service as your Chair during this time of great opportunity!

Chris Perfetti,
cperfetti@unm.edu

Join Us for PHYSOR 2024! “Beyond the Blueprint: Pioneering Reactor Physics for Real-World Implementation”



Location: San Francisco, CA

Dates: April 21 – 24, 2024

Hotel: San Francisco Hilton Union Square

Paper Submission Deadline: November 1st, 2023

Call for Papers: <https://www.ans.org/meetings/file/view-1360/>

General Chairs:

Massimiliano Fratoni (UC Berkeley)
Christopher Perfetti (UNM)

Assistant General Chairs:

Cenk Guler (Westinghouse)
Jason Hou (NCSU)

Technical Program Chairs:

Eva Davidson (ORNL)
Brendan Kochunas (UM)
Luka Snoj (IJS)

Program Chair's Report

Massimiliano Fratoni
maxfratoni@berkeley.edu
RPD Program Chair

Our division will have a large presence at the 2023 ANS Annual Meeting with 44 summaries distributed over ten technical sessions. As usual this is only possible because of the hard work of the Program Committee members and the organizers of panels, and regular and special sessions. In addition, RPD is sponsoring three panels: Advanced/Micro Reactor Multiphysics Modeling and Simulation for Design and Operational Support (Monday, June 12 at 1 pm, cosponsored by OPD), Digital Twin (DT)-Enabling Technologies for Nuclear Systems (Tuesday, June 13 at 1 pm), Recent Advancements in Artificial Intelligence in Nuclear Space (Wednesday, June 14 at 8 am), and MARVEL: Supply Chain Innovations and Industry Partners (Wednesday, June 14 at 10 am).

Make sure to come celebrate this year's recipients of the Early Career Reactor Physicist Award, Rodolfo (Mike) Ferrer (Studs-vik Scandpower) and Carlo Fiorina (TAMU), by attending their award lecture on Tuesday, June 13 at 10 am.

There are few days left to submit summaries for the 2023 ANS Winter Meeting. The deadline is June 26: no extension! The call for papers for PHYSOR 2024 is also out, help us spread the word.

The next Program Committee meeting will be held online on Sunday, June 11, 3-4 pm ET (you can find the link on the ANS portal after logging in). The meeting is open, and everyone is welcome. The annual meeting is also the time when new members get added to the Program Committee. If you are interested in getting involved, do not hesitate to reach out or let us know during the meeting.

Executive Committee

(Terms Expiring June 2024)

Jason Hou
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Sterling M. Harper
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(Terms Expiring June 2025)

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(Terms Expiring June 2026)

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Stefano Terlizzi
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Ishita Trivedi
Ishita.Trivedi@inl.gov

RPD Member Headcount:

1,496 members
(as of 05/26/2023)

Upcoming RPD EC/ PD Meeting: 06/11/2023 at 3pm EDT

Please join us before the upcoming ANS Winter Meeting for a virtual Reactor Physics Division (RPD) Program (3 PM EST) and Executive Committee Meeting (4 PM EST). The meeting is open to any ANS member to participate, with RPD PC and EC members strongly encouraged to attend.

The meeting will take place virtually via the Zoom and you can find the link: <https://us02web.zoom.us/j/81850856821?pwd=M3FhU3JT-NEZBN1pIbXZlXzcWdCUDNaZz09>
Meeting ID: 818 5085 6821
Passcode: 854009

Honors & Awards

Dimitrios Cokinos
cokinos1@outlook.com
RPD Honors & Awards Comm. Chair

EARLY CAREER REACTOR PHYSICIST AWARD

This year we have two winners of the Early Career Reactor Physicist Award. They are, Rodolfo (Mike) Ferrer of Studsvik Skanpower Inc., and Carlo Fiorina of Texas A&M University. They both have made outstanding contributions in the field of Reactor Physics.

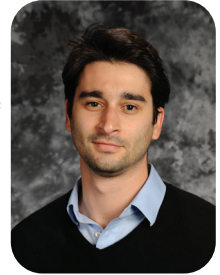
Treasurer's Report

Shane Stimpson
sgstimpson@bwxt.com
RPD Treasurer

So far, 2023 has been a very calm year for the finances. RPD began 2023 with a balance of \$81,832 and year-to-date has brought in \$519 from membership dues. Overall, our

Newsletter Prepared By:

Abdalla Abou-
Jaoude
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RPD Secretary



Abdalla is an R&D Staff Scientist at Idaho National Laboratory. He leads several initiatives for various DOE programs mostly relating to: advanced modeling & simulation, molten salt reactors, and nuclear technoeconomics. Abdalla obtained his PhD from Georgia Tech and his MEng from Imperial College London. Outside work Abdalla enjoys traveling, skiing, cooking, and hiking.

As is customary, Mike and Carlo will deliver their "ECRP Lecture" during the 2023 Annual ANS meeting in Indianapolis on June 13, at which time they will receive their awards. I urge you all to attend these interesting presentations. Please check with the meeting program for the date/time and location of the lectures.

We invite members of the RPD to nominate qualified individuals for this ECRP award.

membership revenues are still roughly in line with last year's values. In terms of expenditures, \$2250 has been spent on support for the ANS Student Conference. As such, this leaves RPD with a total balance of \$80,101.

The RPD financial health would not be possible without your contributions. Please take a few minutes to renew your membership by the end of this calendar year.

Current RPD Program Committee

2021 – 2024

- Ben Betzler
- Rike Bostelmann
- Blair Bromley
- Eva Davidson
- Jason Hou
- Abdalla Abou-Jaoude
- Tian Jing
- Stephanie Kempf
- Vefa Kucukboyaci
- Connor Lin
- Wei Shen
- Vladimir Sobes
- Pavel Tsvetkov
- Zeyun Wu

2022 – 2025

- Paolo Balestra
- Carlo Fiorina
- Massimiliano Fratoni
- Cenk Guler
- Scott Palmtag
- Joshua L. Peterson-Droogh

Scholarships

Benoit Forget
bforget@mit.edu
RPD Scholarships Chair

The reactor physics division is proud to announce the winners of our RPD sponsored scholarships. The recipient of the Rudi J.J. Stamm'ler award is Matthew Louis from Georgia Tech, and the recipient of the Allan Henry / Paul Greebler award is Muhammad Oktavian from Purdue University.

<https://www.ans.org/scholarships/>

Reactor Physics Standards

Dimitrios Cokinos
cokinos1@outlook.com
RPD Standards Committee Chair

Highlights of the efforts in the ANS-19, Physics of Reactor Design Working Group are reported below:

1. ANS-19.1 - Nuclear Data for Reactor Design.

Currently, the goal is to complete the draft and have it available for reviews, so that the standard can be released during the current year.

2. ANS-19.3 - Static Neutronics Methods for the Analysis of Power Reactors.

This standard has been released and is available for sale. It covers the most significant areas of power reactor design

and, for the convenience of the user, an extensive list of state-of-the-art codes is provided in the Appendix. It should be noted that the Appendix is not part of the standard.

3. ANS-19.3.4 - Determination of the Thermal Energy Deposition rates in Nuclear Reactors.

This newly-revised standard covers all types of reactors from fast to thermal, from test and research to power reactors. It has already been published. As an added feature, this revision has an Appendix in which a sample problem is discussed. As mentioned earlier, an Appendix to a standard is not part of the standard.

4. ANS-19.4 - A Guide for Acquisition and Documentation of Reference Power Reactor Physics Measurements for Nuclear Analysis Verification.

This standard specifies criteria for performing and documenting measurements

of LWRs to be used as a reference in validating reactor physics computational methods.

5. ANS-19.6.1 - Reload Startup Physics Tests for PWRs.

Prescribes startup test conditions and procedures to ensure that operating characteristics of core are consistent with design predictions.

6. ANS-19.10, Fast Neutron Fluence in LWR Pressure Vessels and Reactor Internals.

This standard has been revised and is being reviewed for approval.