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AAD News

A newsletter of the ANS Accelerator Application Division

Your AAD Leadership Team

Officers:

Reg Ronningen — Past Chair
William C. Horak — Chair
Gregory E. Dale — Vice-Chair
Valeriia N. Starovoitova —
Secretary
Lin Shao — Treasurer

Executive Committee (3 year term):

Eva R. Birnbaum (2022)
Irina I. Popova (2022)
Rolland P. Johnson (2022)
Blair Bromley (2021)
Lawrence Heilbronn (2021)
Fredrik Tovesson (2021)
John D. Galambos (2020)
Michal Mocko (2020)
Lin Shao (2020)
Philip L. Cole (2019)
Richard C. Lanza (2019)
Ross F. Radel (2019)

Message from the Chair

As I start my term as Chair of AAD, I want to thank Reg Ronningen for his service as chair these past two years. Reg has worked tirelessly for our division and has been particularly successful in increasing our sponsorship of student papers and conferences, which are the key to our future. The division presented Reg with a gavel plaque at the June meeting in recognition of all his hard work.

This is a time of change for the ANS and the AAD. I urge all members to read the e-mail sent by the new President Marilyn C. Kray on the changes that were enacted at the June meeting. During the coming year, the AAD officers, Greg Dale, Valeriia Starovoitova, Lin Shao, and myself will be working with the executive committee to implement these changes

within the AAD and put it on a strong path for the future. We will be keeping all division members informed on the upcoming changes so please keep an eye out for our e-mails and check our website for the latest news.

I would like to welcome to the executive committee new members: Eva R. Birnbaum, Irina I. Popova, and Rolland P. Johnson. I would encourage the members who were not selected to consider running again next year.

There are three special events for our division that are coming up in the next several months. First, a special session on one of the ANS grand challenges, "Accelerate the Development and Qualification of Advanced Materials", will be organized and chaired by Reg at the ANS

2019 Winter Meeting, in Washington DC. Second, the 5th International Workshop on Accelerator-driven Subcritical Systems & Thorium Utilization to be held in Mol, Belgium on Nov. 6-8, 2019. And third, AccApp'20, will be held in Vienna, Austria, on April 5-9, 2020. You can read more about these events on page 4 of this newsletter.

Finally, I would like to thank Valeriia for her editing and publishing our latest newsletter and Charles Kelsey and Peter Hosemann for serving as the webmasters for the division website.

Sincerely,

William C. Horak

Spotlight Article: Educational Opportunities Provided by the US Particle Accelerator School

The U.S. Particle Accelerator School (USPAS) is a national graduate-level program that provides training and workforce development in the science and technology of particle accelerators. Accelerators are well recognized as vital tools in discovery science, but also have broad applications in high tech industry and medicine. The USPAS courses provide specialized training that helps prepare students to work in this field. A broad variety of students attend

the USPAS from universities, laboratories, private companies, medical facilities, government, and the military. Student backgrounds range from beginning graduate and undergraduate students in universities to experienced scientists and engineers.

USPAS sessions are held twice a year (in January and in June) and are two weeks in duration. Sessions are delivered at locations distributed around the country,

which are selected for proximity to accelerator labs and facilities. The format of the sessions have been relatively consistent since 1987. In each session, we typically offer 10-14 academically rigorous, university-style classes on physics and engineering topics that are taught by recognized leaders of the field. Classes can be full two-weeks (examples: *Accelerator Fundamentals*, *Accelerator*

(cont. on next page)

Educational Opportunities Provided by the US Particle Accelerator School (cont.)

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“Students typically return to USPAS for multiple sessions and report high satisfaction.”

tor Physics, Microwave Measurements Lab, ...) or one-week short classes (examples: *Radiation Damage of Materials and Electronics, Cryogenic Engineering,...*). Total enrollment in the sessions typically ranges from 120-150 students and 30-40 instructors, teaching assistants, and graders.

USPAS courses are typically not available in standard university curricula. The intensive format allows students to achieve competency in a short period of time with minimal interference with their academic studies, research, and/or project work. In spite of this session brevity, hours of student engagement with faculty and assistants in USPAS courses exceeds those of typical three semester-hour university courses. This gives an intense, but rewarding, experience. Every USPAS course has a web page description stating: the purpose and audience, prerequisites, objectives, instructional methods, course contents, and reading and credit requirements. For example,



USPAS Instructor Elvin Harms with students in Fundamentals laboratory.



USPAS tour group at the Spallation Neutron Source in Winter 2019 at Oak Ridge National Lab.

our Summer 2019 session held in Albuquerque, NM near Los Alamos and Sandia National Labs has an associated [web page](#) and linked course descriptions. Students and instructors often make valuable professional contacts at our sessions, which enhances the experience. Students typically return to USPAS for multiple sessions and report high satisfaction.

The USPAS is primarily funded by the U.S. Department of Energy, Office of High Energy Physics, which supports accelerator science and technology as a service to the field. The school administrative office is based at Fermilab. The school is governed by a collaboration of ten DOE national laboratories and universities with active programs in accelerators. This organization helps ensure that the USPAS delivers broad and evolving training meeting the needs of the accelerator science and technology community.

Major research universities sponsor and provide credit

for USPAS courses. Each sponsor university vets instructors, course offerings, grants academic credit, and maintains student transcripts. Eligible students can earn host university credit by successfully completing the course requirements which include lectures, problem sets, and examinations. The USPAS, in a collaborative program with Indiana University Bloomington, also provides a highly economical Master's of Science Degree based on USPAS courses.

USPAS courses have helped train many luminaries in accelerator science and technology. Course materials have become resources in many accelerator sub-fields. Numerous advanced textbooks have evolved from USPAS courses.

To attend our sessions, students pay a registration fee (includes course fees and materials as well as two meals a day), housing costs, and travel expenses. We offer limited financial support to the students.

Awards and Scholarships

We would like to congratulate our AAD colleague, **Dr. Robert W. Youngblood**, who was nominated as an ANS Fellow at 2019 ANS Annual Meeting for his contributions to research, training and innovations, as well as his leadership!

We would also like to congratulate **Professor Philip Cole** from Lamar University, a long-standing supporter and executive committee member of AAD. Dr. Cole received Convening Fundamental Physics Innovation Award from the American Physical Society .

We all want to congratulate **Dr. Reg Ronningen**, who has worked tirelessly for our division and has been particularly successful in increasing our sponsorship of student papers and conferences, which are the key to our future. The division presented Reg with a gavel plaque at the June meeting in recognition of all his hard work!

Finally we want to congratulate 2019 AAD Scholarship Recipient, **Charles M. McSwain** from University of Tennessee, Knoxville. Keep up the good work!



Dr. Reg Ronningen receiving the gavel award

Blair and Jennifer Bromley create legacy in gift to Visionary Scholarships

Dr. Blair Bromley, who is a University of Illinois Urbana-Champaign alumni (MS 1998 Aerospace Engineering, PhD 2001 Nuclear, Plasma, and Radiological Engineering) and his wife, Ms. Jennifer Bromley, also a University of Illinois alumni (MA 1997 Teaching of English as a Second Language, MA 1999 Linguistics), established the Blair and Jennifer Bromley Canada-US Friendship NPRE Visionary Scholarship Fund to support undergraduate and graduate students at U of I NPRE.

Dr. Bromley recalled how he got accepted to several highly ranked graduate schools, but only U of I was able to provide him with much

needed financial support. "I felt a very strong desire and need to be able to give back ... to help future generations of students", said Dr. Bromley. "We strongly believe in the importance of education and supporting the next generation of

scholars" added Ms. Bromley.

Until the end of 2019, The Grainger Foundation matches their gift. Big thank you to Blair and Jennifer Bromley for their generous support!



Blair and Jennifer Bromley.

<https://emails.illinois.edu/newsletter/223541.html>

Upcoming Events

“ACCELERATE THE DEVELOPMENT AND QUALIFICATION OF ADVANCED MATERIALS” : A SPECIAL SESSION AT ANS WINTER MEETING

Washington DC, USA
November 17-21, 2019

The session title is “Advanced Material Testing Using Accelerators” and is being organized by the Accelerator Application Division with co-sponsorship by the Materials Science and Technology Division and the Fusion Energy Division. Reg Ronningen, the organized and chair of this session, has assembled a group of distinguished scientists and will lead a discussion of how accelerators are crucial to meeting this grand challenge.



5th INTERNATIONAL WORKSHOP on ACCELERATOR-DRIVEN SUB-CRITICAL SYSTEMS & THORIUM UTILIZATION

Lakehouse, Mol, Belgium
6-8 November, 2019

The purpose of this workshop is to gather world leading experts on ADS and Thorium cycle technologies to share experiences, review state-of-the-art technologies and develop collaborations. Partial travel support to graduate students and postdoctoral researchers is available.



International Topical Meeting on Nuclear Applications of Accelerators (AccApp'20)

The purpose of International Topical Meetings on the Applications of Accelerators is to provide an international forum for discussing the various applications of particle accelerators.

AccApp'20 will take place in April 2020 at the IAEA headquarters in Vienna, Austria. This meeting will be a great opportunity for nuclear physicists, accelerator physicists, nuclear engineers, and other experts in the international community to meet and discuss their research face-to-face.

Wide range of topics will be covered including: Accelerator Facilities, Design & Technology, Nuclear Data and Accelerator Applications.

Numerous sessions will be dedicated to uses of accelerators in Industry, Medicine, Security and Forensics, Material Science, Environmental Studies, and Cultural Heritage

Abstract submission is open at www.accapp20.org.

Travel support to graduate students and postdoctoral researchers is available.

This is the major topical meeting sponsored by our division and we expect the program will be as challenging and interesting as the previous AccApp meetings. We can personally attest that Vienna is a great place to be in the spring, so please, make plans soon to participate. We are looking forward to seeing you in Vienna!

Have a Story to Tell?

Would you like to contribute a news item or article to a future edition of the ANS ADD Newsletter? Member contributions to the newsletter are always welcome. Please send your article to Valeriia Starovoitova (starvale@isu.edu).

