

Neutron Scattering Society of America (NSSA)



Purpose and New Initiatives

www.neutronsattering.org

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SNS/ANL School on Neutron and X-Ray Scattering
June 2010

What is the NSSA?

- ◆ NSSA is an organization of scientists and engineers with a common interest in using neutron scattering for research.
- ◆ Formed in 1992, NSSA now has almost 1500 members from 26 countries
- ◆ Became a non-profit corporation in 2002
- ◆ Sister organizations in Europe, Japan and Canada
- ◆ NSSA is an advocacy group for **YOUR CONCERNS** about neutron sources, instruments, and user policies

NSSA GOALS AND PURPOSE

- ◆ To identify and provide a focal point for the neutron scattering community in the USA
- ◆ To identify the needs of the neutron community (present and future source and instrumentation requirements) and to bring these needs to the neutron facility management and funding sources.
- ◆ To foster educational activities associated with neutron scattering including conferences, workshops, and neutron scattering schools.

From the Members

- ◆ We ask our members to freely communicate to NSSA their successes, problems, and concerns about present-day issues and longer-term concerns about new sources and instruments.
- ◆ We call on our members (hopefully not too frequently!) to write to the Federal Funding Agencies and to the Congress on issues affecting the future of our careers.
- ◆ In short, **WE WANT AND NEED TO HEAR FROM YOU:**
 - www.neutronsattering.org
 - fernandezbja@ornl.gov

NSSA Executive Committee

Elected 2009

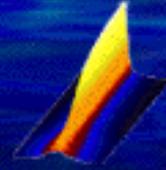
- ◆ **President:** *Bruce Gaulin*, Dept. of Physics, McMaster Univ.
- ◆ **Vice-President:** *Simon Billinge*, Dept. of Physics, Columbia University
- ◆ **Secretary:** *Suzanne G.E. te Velthuis*, Matls. Science Division, Argonne National Lab.
- ◆ **Treasurer:** *John Tranquada*, Physics Dept., Brookhaven National Lab
- ◆ **Membership Secretary:** *Jaime Fernandez-Baca*, Neutron Sciences Division, Oak Ridge National Laboratory
- ◆ **Communications Secretary:** *Thomas Proffen*, Lujan Center, Los Alamos National Laboratory
- ◆ **3 Members at Large (to be nominated by Executive Committee)**

Current NSSA Concerns

- ◆ Building an enthusiastic young group of neutron scattering investigators who will be the core users and support of the SNS and upgraded facilities at other sources.
- ◆ Reassuring graduate students* that neutrons have a bright future in the US
 - (* i.e., can I get a job and do research if I get a Ph.D. in neutron scattering?)

Current NSSA Initiatives

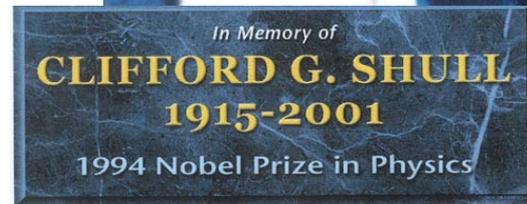
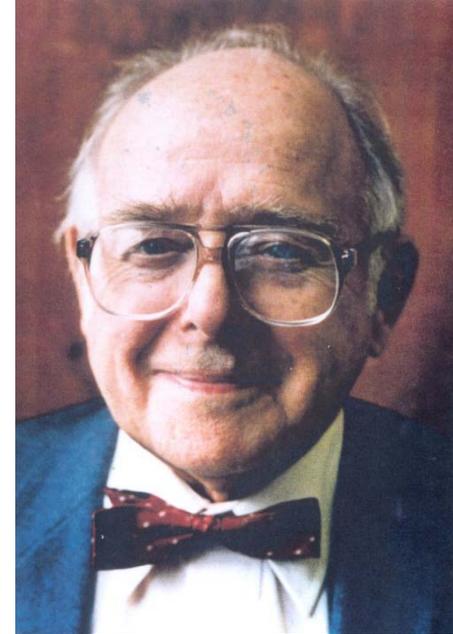
- ◆ Organizes the *American Conference on Neutron Scattering*. This meeting, held every two years, has a rotating venue among the national neutron centers. It is intended to serve as a national user meeting as well as showcase recent research results.
- ◆ Awards the Clifford G. Shull Prize in Neutron Science, the NSSA Sustained Research Prize, the NSSA Science Prize, and the Outstanding Student Research Prize
- ◆ Hosts information booths and displays at major national meetings (e.g., March 2000 – 2006 APS)



- ◆ 2008 Meeting held in Santa Fe, New Mexico May 11-15
- ◆ 400 in attendance
- ◆ > 300 papers including large number of invited/tutorial papers
- ◆ Third Shull Prize in Neutron Science awarded to Prof. Sow-Hsin Chen from MIT
- ◆ Several tutorial workshops were held on Sunday before conference
- ◆ Next conference June 26, 2010 – Ottawa, Canada

Clifford G. Shull Prize in Neutron Science

**Dr. Herbert A. Mook, Jr. from ORNL
will receive the 2010 Clifford G. Shull Prize**



“For outstanding contributions to the study of magnetism, superconductivity, and quantum phenomena in matter with neutrons”

NSSA Research Prizes

- ◆ ***Prof. Collin Broholm***

Johns Hopkins University, will receive the 2010 Sustained Research Prize

“For outstanding neutron scattering studies of correlated electron physics in magnets, metals and superconductors, and for science-driven development of neutron scattering techniques”

- ◆ ***Dr. Craig Brown, NCNR***

NIST Center for Neutron Research will receive the 2010 Science Prize

“For outstanding neutron scattering studies of hydrogen-framework interactions in metal-organic frameworks”

- ◆ **NSSA also awards an Outstanding Student Research Prize at each ACNS**



U.S. Neutron Scattering Schools

- ◆ National Neutron and x-ray Scattering Summer School
 - Introduction to neutron and x-ray scattering
 - Now 2 ½ weeks – Month varies
 - <http://www.dep.anl.gov/nx/>; Application deadline -- varies
- ◆ NCNR-NIST Summer School
 - Emphasizes alternately NCNR neutron spectroscopy and small angle scattering and reflectometry instruments
 - One week in June
 - <http://www.ncnr.nist.gov/summerschool/index.html> ; Application deadline -- April
- ◆ LANSCE School in Neutron Scattering
 - Topical focus (changes each year)
 - 9 days – Month varies depending on beam cycle
 - <http://www.lansce.lanl.gov/neutronschool/> ; Application deadline -- varies
- ◆ All have a mixture of classroom lectures and hands-on experiments
- ◆ All have funds for travel and subsistence support for students accepted
- ◆ Students need not be US citizens, but must be affiliated with a US university, industry, or national laboratory

2010 LANSCE Neutron School Los Alamos, New Mexico

The focus of the 2010 Neutron School at the Los Alamos National Laboratory is Structural Materials. It will describe how neutron scattering methods can provide unique insights to diverse areas of interest ranging from shape memory alloys, to intermetallics, to super-alloys, to bulk metallic glass composites. Lecturers of international stature will cover introductory material and describe exciting new opportunities deriving from new DOE-funded instruments and from the next generation spallation neutron source.

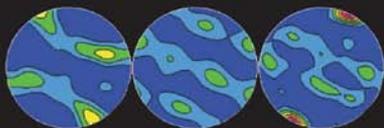
Introductory talks will cover the theory of neutron diffraction and Rietveld analysis. Specific areas of interest will include composites, texture, and residual (macro and intergranular) stresses. A series of case studies will illustrate in practical terms how scattering experiments contributed insight to disparate problems. The complementarity of neutron and synchrotron X-ray measurements as well as with conventional methods will also be described.

The lectures will be complemented by "hands-on" experiments using SMARTS, HIPPO, NPDF and LQD all of which are world-class scattering instruments at the Lujan Center.

By the end of the school the students will have experience with a variety of tools to study the behavior of structural materials. Applicants should be full-time graduate students or postdocs in an appropriate physics, materials science or engineering discipline. Industrial researchers and advanced undergraduate students are also invited to apply.

The deadline for receiving applications is May 1, 2010 .

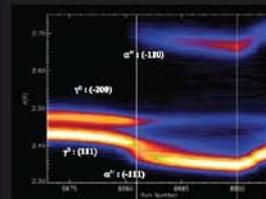
Tuition is free and assistance for travel, lodging, and subsistence is available.



Neutron School Director:
Jim Rhyne
Los Alamos National Laboratory

Neutron School Chair:
Don Brown
Los Alamos National Laboratory

Topic:
Structural Materials
August 5-13, 2010



Guest Lecturers (partial list):
Tom Holden
Northern Stress Technologies

Aaron Krawitz
University of Missouri

Cev Noyan
University of Columbia

Carlos Tome
Los Alamos National Laboratory

Tamas Ungar
Eotvos University, Budapest

Neutron School Co-Chair:
Heinz Nakotte
New Mexico State University

Neutron School Secretary:
Lisa Padilla
Los Alamos National Laboratory

www.lansce.lanl.gov/neutronschool



Anyone Here Not a Member of NSSA?

We would like to have you join (it's free)!!

And we have a membership sign-up sheet
(soon to be on the web)