

Polarized Neutrons for Condensed Matter Investigations (PNCMI) 2012



Hiking C & O Canal

Washington D.C.

NIST Center for Neutron Research

Smithsonian Museums

NIST Campus Deer

The NIST Center for Neutron Research (NCNR) proposes hosting the next PNCMI conference in July of 2012. The NCNR (www.ncnr.nist.gov) is located on a scenic, country-like campus in Gaithersburg, MD, nestled in the foothills of the Allegheny mountain range, yet within easy access to Washington D.C. using the public Metrorail transport. Participants would be housed in the Washingtonian Center (<http://www.shopwashingtonian.com/main.html>), a bustling community of shops, restaurants, hotels, and movie theatre accessible via Metrorail and just minutes to the NIST campus by auto. Group busing would be provided to and from the conference site morning and evening, while complimentary shuttle service arranged through the local hotels could be used to travel back and forth at other times. The conference would include an inaugural reception, tour of the NCNR reactor and newly upgraded beam lines, and an American-style outdoor banquet. It is very probable that the American Conference on Neutron Scattering will also be hosted by the NCNR in Washington DC during the summer of 2012, in which event every effort would be made to schedule these conferences back-to-back. Additionally, we have spoken to scientific representatives from other North American neutron facilities and have the support of Argonne Nat. Lab, Los Alamos Nat. Lab, Oak Ridge Nat. Lab, Indiana Low Energy Neutron Source, and the NRC Canadian Neutron Beam Centre.

Preceding the PNCMI conference, the NCNR would host a three day, tutorial-based summer school which would also held on the NIST campus with housing at the Washingtonian Center. The aim of the school would be to familiarize students with the concepts and intricacies of polarized neutron scattering, and it would involve a mix of invited lectures and guided, hands-on manipulation of data using standard polarization reduction software. Suggested topics include a brief refresher to neutron scattering techniques, the spin selection rules of polarized neutrons with applications to magnetism and the separation of incoherent hydrogen-scattering, specular and off-specular reflectivity, triple-axis diffraction, small-angle scattering, inelastic scattering, practical guidance on experimental planning (i.e. maintaining a polarized beam and the pros and cons of using a multilayer supermirror versus a Heusler crystal or a ^3He spin filter), and a tour of the NCNR's state-of-the art ^3He spin filter laboratory. Students would experience three, intense days of summer school (Wednesday through Friday), followed by two days to rest and explore before the conference social opening on Sunday afternoon.

Using the NIST facilities and assuming a conference attendance of 150 people, a conference fee of approximately \$500 (current USD) would cover conference room usage and technical support, registration, poster sessions, printed programs, coffee breaks and lunch, busing to and from a designated hotel, reactor tour, banquet, and waiver fee for 15 invited speakers (approximately \$450 without waivers). Hotels in the Washingtonian Center currently cost \$140/night. To keep participation cost low, it might be feasible to published conference proceedings in the refereed, open access NIST Special Publication journal in place of *Physica B*. Additionally, if selected, we would seek financial sponsorship in order to help subsidize the cost of student travel and participation in the summer school.

Sincerely,

Drs. Kathryn Krycka, William Ratcliff, Charles Majkrzak, Wangchun Chen, Julie Borchers, Brian Maranville, Ross Erwin, Jason Gardner, Brian Kirby, Shannon Watson, and Samuel El-Khatib (future, local organizing committee)