

24<sup>th</sup> National School on Neutron and X-ray Scattering  
July 10 – July 22, 2022

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**SCHEDULE FOR SATURDAY, July 9, 2022**

3:00 - 6:00 PM – School participants arrive at Oak Ridge Hotel via flights.

6:30 - 8:30 PM – Informal get-together at Oak Ridge Hotel. Buffet and beverages for all school participants.

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**Oak Ridge SCHOOL OPENING - SUNDAY, July 10, 2022**  
Spallation Neutron Source (SNS) Building 8600, Iran Thomas Auditorium, Room A103

Sunday, July 10 <sup>th</sup>	Sunday, July 10 <sup>th</sup> (cont.)	Sunday, July 10 <sup>th</sup> (cont.)
7:45 Picked up at hotel (Breakfast on own at hotel each morning before 7:45)	Lecture (11:00 – 12:00) Neutron Generation and Detection/Neutron Optics and Instrumentation Gabriele Sala Oak Ridge National Laboratory	3:30 – 6:30  Tours: SNS, HFIR, Graphite Reactor
8:30 – 10:00  Badging and Safety Training		
10:00 – 10:45  Welcome to ORNL  Opening Remarks  ORNL NXS Team: Bianca Haberl Mike Manley Adam Aczel Keith Taddei	Lunch - 12:00 – 1:00	
	Lecture (1:00 – 2:00) Interaction of X-rays and Neutrons with Matter Roger Pynn University of Indiana	
	Break - 2:00 – 2:15	
&  Hans Christen, Division Director, Neutron Scattering Division ORNL	Lecture (2:15 – 3:15) Interaction of X-rays and Neutrons with Matter Rana Ashkar Virginia Tech	6:30 – 7:15  Dinner and Discussions  7:15 PM – Buses depart ORNL for hotel
	Break - 3:15 – 3:30	

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## Program Week 1 – July 10-16, 2022

Spallation Neutron Source (SNS) Building 8600, Iran Thomas Auditorium, Room A103

Monday July 11 <sup>th</sup>	Tuesday July 12 <sup>th</sup>	Wednesday July 13 <sup>th</sup>	Thursday July 14 <sup>th</sup>	Friday July 15 <sup>th</sup>	Saturday July 16 <sup>th</sup>
7:45 am Bus departs Hotel	7:45 am Bus departs Hotel	7:45 am Bus departs Hotel	7:45 am Bus departs Hotel	7:45 am Bus departs Hotel	
Lecture – 8:30 – 9:30 Interaction of X-rays and Neutrons with Matter Efrain Rodriguez University of Maryland	Lecture – 8:30 – 9:30 PDF Analysis Katharine Page UTK/ORNL	Lecture – 8:30 – 9:30 Magnetic Scattering Pat Clancy McMaster University	Lecture – 8:30 – 9:15 Small Angle Neutron Scattering Lisa Debeer-Schmidt ORNL	8:30-12:30 HFIR/SNS Experiment 4 (17 Instruments)	Bus Travel to Argonne  Bus Departs Hotel 8:00 AM  A boxed lunch will be provided
Break 9:30-9:45	Break/ Group Photo - 9:30 – 9:45	Break - 9:30 – 9:45	Break - 9:15 – 9:30		
Lecture – 9:45 – 10:45 Powder Diffraction Cora Lind-Kovacs University of Toledo	Lecture – 9:45 – 10:45 Inelastic Neutron Scattering Bruce Gaulin McMaster University	Lecture – 9:45 – 10:45 Reflectivity Chuck F. Majkrzak NIST	Lecture – 9:30 – 10:15 Quasi-elastic Neutron Scattering Niina Jalarvo ORNL		
Break - 10:45 – 11:00	Break - 10:45 – 11:00	Break - 10:45 – 11:00	Break - 10:15 – 10:30		
Lecture – 11:00 – 12:00 Single Crystal Diffraction Christine Beavers Diamond Light Source	Lecture – 11:00 – 12:00 Inelastic Neutron Scattering Bruce Gaulin McMaster University	Lecture – 11:00 – 12:00 Neutron Polarization Chuck F. Majkrzak NIST	Lecture – 10:30-11:15 Neutron Vibrational Spectroscopy Yongqiang Cheng ORNL		
			Break – 11:15 – 11:30 Lecture – 11:30-12:15 Neutron Spin Echo Spectroscopy Laura Stingaciu ORNL		
Lunch – 12:00 – 1:00	Lunch – 12:00 – 1:00	Lunch – 12:00 – 1:00	Lunch – 12:15 – 1:15	Lunch – 12:30 – 1:30	
1:00 – 5:30  HFIR/SNS Experiment 1 (16 Instruments)  See Experiments Schedule	1:00 – 5:30  HFIR/SNS Experiment 2 (17 Instruments)  See Experiments Schedule	D&I Event – 1:00 – 2:00  Break - 2:15 – 3:00  Lecture – 2:15 – 3:00 AI for Scattering Experiments Thomas Proffen ORNL  Break - 3:00 – 3:15  Lecture 3:15 – 4:00 Neutron User Facilities Mark Lumsden ORNL  Bus Departure	1:15 – 5:45  HFIR/SNS Experiment 3 (16 Instruments)  See Experiments Schedule	Lecture – 1:30 – 2:15 Imaging with Neutrons Yuxuan Zhang, ORNL Hassina Bilheux, ORNL	Dinner at Argonne
				Break – 2:15 – 2:30	
				Lecture – 2:30 – 3:15 Engineering Diffraction Thomas Gnaeupel-Herold NIST	
				Break – 3:15 – 3:30	
				Lecture – 3:30 – 4:30 Experiments with TOF & steady-state neutrons Stuart Calder and Garrett Granroth, ORNL	
5:30 – 7:00  Dinner and Discussion	5:30 – 7:00  Dinner and Discussion	5:30 – 7:30 Melton Hill Lake Picnic Bus departs hotel at 4:30	5:45 – 7:15  Dinner & Discussion	4:30 – 7:00 Dinner/Social at SNS Hosts: Everette/Moody	

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SCHEDULE FOR SATURDAY, July 16, 2022

School participants arrive at Argonne and register at the Argonne Guest House, Building 460.  
 Registration will be from 5-6:00 pm with dinner from 6:00-8:00 pm, both at the Argonne Guest House.

ARGONNE SCHOOL OPENING - SUNDAY, July 17, 2022  
 Lower-Level Gallery, APS Building 402

Sunday, July 17 <sup>th</sup>		Sunday, July 17 <sup>th</sup> (cont.)
8:00 – 9:00 Breakfast Buffet Argonne Guest House Restaurant		Lecture – 9:45 – 10:40 Welcome & Overview of the APS Laurent Chapon APS Director, Argonne National Laboratory
9:30 – 9:45 Opening Remarks  Stephan Rosenkranz Materials Science Division Argonne National Laboratory  Uta Ruett X-ray Science Division Advanced Photon Source Argonne National Laboratory  Yong Choi Magnetic Materials Group Argonne National Laboratory		Break - 10:45 – 11:00
		Lecture – 11:00 – 12:00 X-ray Generation & Instrumentation Dennis M. Mills APS, Argonne National Laboratory
		Lunch - 12:00 – 1:00
		Lecture Continued – 1:00 – 2:00 X-ray Generation & Instrumentation Dennis M. Mills APS, Argonne National Laboratory
		2:30 – 7:30 Outing to Chicago Bus leaves from Guest House

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Program Week 2: July 17-22, 2022

Location: Lower-Level Gallery, APS Building 402

Monday July 18 <sup>th</sup>	Tuesday July 19 <sup>th</sup>	Wednesday July 20 <sup>th</sup>	Thursday July 21 <sup>st</sup>	Friday July 22 <sup>nd</sup>	Saturday July 23 <sup>rd</sup>
Lecture – 8:30 – 9:30 Inelastic X-ray Scattering Jason Hancock University of Connecticut	Lecture – 8:30 – 9:30 X-ray Imaging Chris Jacobsen Argonne National Laboratory/Northwestern University	8:30 – 12:00 Experiments II APS  See Experiments Schedule	Lecture – 8:30 – 9:30 Diffuse Scattering/Beyond the Bragg peaks Ray Osborn Argonne National Laboratory	8:30 – 12:00 X-ray Experiment IV APS  See Experiments Schedule	Return travel
Break - 9:30 – 9:45	Break - 9:30 – 9:45		Break - 9:30 – 9:45		
Lecture – 9:45 – 10:45 Resonant elastic and inelastic scattering Mark Dean Brookhaven National Lab	Lecture – 9:45 – 10:45 Fast x-ray imaging and diffraction for engineering materials science Tao Sun University of Virginia		Lecture – 9:45 – 10:45 Surface and Interface Scattering Peter Eng GSECARS		
Break - 10:45 – 11:00	Break - 10:45 – 11:00		Break - 10:45 – 11:00		
Lecture – 11:00 – 12:00 X-ray magnetic circular dichroism and linear dichroism Jian Liu University of Tennessee	Lecture – 11:00 – 12:00 Coherence Based Imaging Ross Harder Argonne National Laboratory		Lecture – 11:00 – 12:00 SAXS Tao Li Northern Illinois University		
Lunch - 12:00 – 1:00 (Cafeteria or 401 Grill)					
APS Tour – 1:00 – 2:00	1:00 – 5:00  Experiments I APS  See Experiments Schedule	Lecture – 1:00 – 2:00 X-ray Photon Correlation Larry Lurio Northern Illinois University	1:00 – 5:00  Experiments III APS  See Experiments Schedule	Lecture – 1:00 – 2:00 In situ & operando experiments Karna Chapman Stony Brook	
Lecture – 2:00 – 3:00 X-ray spectroscopy Kelly Shelly APS, Argonne National Laboratory		Break - 2:00 – 2:15		Break – 2:00 – 2:15	
Lecture – 3:00 – 3:45 X-ray User facilities in North America Jonathan Lang APS, Argonne National Laboratory		Lecture – 2:15 – 3:15 General introduction to FELs Paul Fuoss LCLS/Stanford Linear Accelerator		Lecture – 2:15 – 3:15 AI impacting experiments and analysis Mathew Cherukara ANL	
Break - 3:45 – 4:00		Break - 3:15 – 3:30		Break - 3:15 – 3:30	
Lecture – 4:00 – 5:00 High Pressure Measurements Bianca Haberl Oak Ridge National Laboratory		Lecture – 3:30 – 4:30 Probing ultrafast dynamics Linda Young Argonne National Laboratory		Lecture – 3:30 – 4:30 Proposal writing Suzanne te Velthuis Argonne National Laboratory	
		4:45 – 6:00 Dinner & Career Path at National Labs			
5:30 – 6:30 Dinner (Guest house)				6:00 – 7:30 ANL Wrap-up Dinner	

