

25th National School on Neutron and X-ray Scattering
August 6 – August 18, 2023

SCHEDULE FOR SATURDAY, August 5, 2023

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.

Oak Ridge SCHOOL OPENING - SUNDAY, August 6, 2023

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

Sunday, August 6 th		Sunday, August 6 th (cont.)		Sunday, August 6 th (cont.)
7:45 am Bus departs hotel (Breakfast on own at hotel before departure each morning)		Lecture (11:05 – 12:05) Interaction of X-rays and Neutrons with Matter I Roger Pynn University of Indiana		3:40 – 6:40 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 & Jon Taylor NSD Director, ORNL		Lunch (12:05 – 1:00)		6:40 – 7:45 Dinner and Discussion Buses depart ORNL for hotel at 7:45 pm
		Lecture (1:00 – 2:00) Interaction of X-rays and Neutrons with Matter II Rana Ashkar Virginia Tech		
		Break (2:00 – 2:20)		
		Lecture (2:20 – 3:25) Interaction of X-rays and Neutrons with Matter III Efrain Rodriguez University of Maryland		
Break (10:45 – 11:05)		Break (3:20 – 3:40)		

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Program Week 1 – August 6 – 11, 2023

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

Monday August 7 th	Tuesday August 8 th	Wednesday August 9 th	Thursday August 10 th	Friday August 11 th	Saturday August 12 th
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) Neutron Generation, Optics, Detection, and Instrumentation Thomas Huegle, ORNL	Lecture (8:30 – 9:30) Neutron Spectroscopy Bruce Gaulin McMaster University	Lecture (8:30 – 9:30) Small Angle Neutron Scattering Lisa Debeer-Schmitt, ORNL	Lecture (8:30 – 9:15) Neutron Reflectivity Chuck Majkrzak, NIST	8:30-12:30 HFIR/SNS Experiment 4 (15 Instruments)	Bus Travel to Argonne 8:00 am Bus Departs Hotel A boxed lunch will be provided
Break (9:30 – 9:50)	Break (9:30 – 9:50)	Break (9:30 – 9:50)	Break (9:15 – 9:35)		
Lecture (9:50 – 10:50) Powder Diffraction Cora Lind-Kovacs University of Toledo	Lecture (9:50 – 10:50) Neutron Spectroscopy II Bruce Gaulin McMaster University	Lecture (9:50 – 10:50) Neutron Imaging Yuxuan Zhang, ORNL Hassina Bilheux, ORNL Jean Bilheux, ORNL	Lecture (9:35 – 10:20) Quasi-elastic Neutron Scattering Niina Jalarvo, ORNL		
Break (10:50 – 11:10)	Break (10:50 – 11:10)	Break (10:50 – 11:10)	Break (10:20 – 10:40)		
Lecture (11:10 – 12:10) Single Crystal Diffraction William Ratcliff NIST	Lecture (11:10 – 12:10) Magnetic Scattering Pat Clancy McMaster University	Lecture (11:10 – 12:10) Neutron Polarization Barry Winn, ORNL Dean Myles, ORNL Josh Pierce, ORNL	Lecture (10:40 – 11:25) PDF Analysis Katharine Page UTK/ORNL		
			Break (11:25 – 11:45)		
			Lecture (11:45 – 12:30) Neutron Spin Echo Laura Stingaciu, ORNL		
Lunch (12:10 – 1:00)	Lunch (12:10 – 1:00)	Lunch (12:10 – 1:00)	Lunch (12:30 – 1:15)	Lunch (12:30 – 1:30)	
1:00 – 5:30 HFIR/SNS Experiment 1 (17 Instruments) See Experiments Schedule	1:00 – 5:30 HFIR/SNS Experiment 2 (17 Instruments) See Experiments Schedule	DEI Event (1:00 – 2:00)	1:15 – 5:45 HFIR/SNS Experiment 3 (17 Instruments) See Experiments Schedule	Lecture (1:30 – 2:15) Vibrational Spectroscopy Yongqiang Cheng, ORNL	Dinner at Argonne
		Break (2:00 – 2:20)		Break (2:15 – 2:35)	
		Lecture (2:20 – 3:05) Machine Learning and AI for Scattering Experiments Thomas Proffen, ORNL		Lecture (2:35 – 3:20) Engineering Diffraction Donald Brown, LANL	
		Break (3:05 – 3:25)		Break (3:20 – 3:40)	
		Lecture (3:25 – 4:10) Neutron User Facilities Mark Lumsden, ORNL		Lecture (3:40 – 4:40) Diffraction and Spectroscopy at TOF vs Continuous Sources Stuart Calder, ORNL Garrett Granroth, ORNL	
5:30 – 6:45 Dinner and Discussion Buses depart ORNL for hotel at 6:45 pm	5:30 – 6:45 Dinner and Discussion Buses depart ORNL for hotel at 6:45 pm	5:30 – 7:30 Melton Lake Picnic Buses depart picnic for hotel at 7:30 pm	5:45 – 7:00 Dinner & Discussion Buses depart ORNL for hotel at 7:00 pm	4:40 – 7:30 Dinner & Social at SNS Hosts: Hans Christen, Mary Odom, Michelle Everett Buses depart ORNL for hotel at 7:30 pm	

August 6 – August 18, 2023

SCHEDULE FOR SATURDAY, August 12, 2023

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, August 13, 2023

Lower-Level Gallery, APS Building 402

Sunday, August 13 th		Sunday, August 13 th (cont.)
8:00 – 8:45 Breakfast Buffet Argonne Guest House		Lecture: 9:15 – 10:00 Welcome & Overview of the APS Laurent Chapon APS Director Argonne National Laboratory
9:00 – 9:15 Welcome to ANL Opening Remarks		10:15 – 11:15 Group Photo & APS Tour
ANL NXS Team: Jessica McChesney Stephan Rosenkranz Chengjun Sun		Lecture: 11:15 – 12:15 X-ray Generation & Instrumentation Dennis M. Mills APS, Argonne National Laboratory
Argonne National Laboratory		Lunch: 12:15 – 1:00
		Lecture continued: 1:00– 2:00 X-ray Generation & Instrumentation Dennis M. Mills APS, Argonne National Laboratory
		2:30 – 9:00 Bus leaves from Guest House Outing to Chicago

25th National School on Neutron and X-ray Scattering
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 Program Week 2: August 13 – 18, 2023
 Location: Lower-Level Gallery, APS Building 402

Monday August 14 th	Tuesday August 15 th	Wednesday August 16 th	Thursday August 17 th	Friday August 18 th	Saturday August 19 th
Lecture: 8:30 – 9:30 Inelastic X-ray Scattering Jason Hancock University of Connecticut	Lecture: 8:30 – 9:30 X-ray imaging Chris Jacobson Argonne / Northwestern University	9:00 – 12:00 APS Tutorials II	Lecture: 8:30 – 9:30 Single crystal diffuse scattering Raymond Osborn Argonne National Laboratory	9:00 – 12:00 APS Tutorials IV	Return travel
Break: 9:30 – 9:45	Break: 9:30 – 9:45		Break: 9:30 – 9:45		
Lecture: 9:45 – 10:45 X-ray spectroscopy Shelly Kelly Argonne National Laboratory	Lecture: 9:45 – 10:45 Fast X-ray imaging and diffraction Liany Chen University of Wisconsin		Lecture: 9:45 – 10:45 Surface and Interface Scattering Dillon Fong Argonne National Laboratory		
Break: 10:45 – 11:00	Break: 10:45 – 11:00		Break: 10:45 – 11:00		
Lecture: 11:00 – 12:00 X-ray dichroism Jian Liu University of Tennessee	Lecture: 11:00 – 12:00 Coherence based imaging Stephan Hruszkewycz Argonne National Laboratory		Lecture: 11:00 – 12:00 Multi-Modal Experiments Yu-Chen Karen Chen-Wiegart Stony Brook University		
Lunch: 12:00 – 1:00					
1:00 – 2:15 Extended Break / Ice Cream	1:00 – 4:00 APS Tutorials I	Lecture: 1:00 – 2:00 X-ray photon correlation spectroscopy Larry Lurio Northern Illinois University	1:00 – 4:00 APS Tutorials III	Lecture: 1:00 – 2:00 Small Angle X-ray Scattering Tao Li Argonne National Laboratory	
		Break: 2:00 – 2:15		Break: 2:00 – 2:15	
Lecture: 2:15 – 3:15 High Pressure Measurements Stella Chariton University of Chicago		Lecture: 2:15 – 3:15 Probing ultrafast dynamics with X-rays Anne Marie March Argonne National Laboratory		Lecture: 2:15 – 3:15 AI for experiment and analysis Mathew Cherukara Argonne National Laboratory	
Break: 3:15 – 3:30		Break: 3:15 – 3:30		Break: 3:15 – 3:30	
Lecture: 3:30 – 4:30 Introduction to X-ray Free Electron Lasers Paul Fuoss Stanford National Laboratory		Lecture: 3:30 – 4:30 X-ray User Facilities in North America Jonathan Lang Argonne National Laboratory		3:30 – 4:30 Networking Roundtable discussions with Beamline Scientists	
Break: 4:30 – 4:45					
Lecture: 4:45 – 5:30 Proposal Writing Jessica McChesney Argonne National Laboratory		5:15 pm Panel & Dinner: Career paths at National Laboratories Guesthouse		5:30 pm Farewell and Dinner Guesthouse	
6 pm Dinner, Guesthouse	6 pm Dinner, Guesthouse		6 pm Dinner, Guesthouse		