

National School on Neutron and X-ray Scattering
August 12-25, 2007

Building 223 Auditorium, Room B002
Argonne National Laboratory
Argonne, Illinois

Sunday, August 12

4:00 p.m. until 8:00 p.m. - An informal get-together is scheduled in the Lodging Facility/Exchange Club located in the lower level of Building 617. Food and beverages will be provided. All School participants and program presenters are invited to attend.

SCHEDULE FOR SCHOOL OPENING - Monday, August 13, 2007 (as of 8/1/07)

| Time/Date | Monday August 13 |
|-------------|--|
| 7:45 - 8:00 | Bus to transport students from the 600 Area lodging facilities (be in front of the building) to Building 223 |
| 8:00 - 9:00 | Registration and Continental Breakfast (Foyer of Building 223 Auditorium) |
| 9:00 - 9:15 | Opening Remarks Dr. Robert Rosner Director Argonne National Laboratory Welcome Dr. Alfred P. Sattelberger Associate Laboratory Director Physical Sciences Argonne National Laboratory Dr. Harold W. Myron Director Division of Educational Programs Argonne National Laboratory Dr. Raymond Osborn Physicist Materials Science Division Argonne National Laboratory Dr. Jonathan Lang Physicist X-ray Science Division Advanced Photon Source Argonne National Laboratory |

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|---------------|---|
| 9:15 - 10:15 | Lecture Interaction of X-rays and Neutrons with Matter S. K. Sinha University of California, San Diego (1) |
| 10:15 - 10:30 | Break |
| 10:30 - 11:30 | Lecture Continued Interaction of X-rays and Neutrons with Matter |
| 11:30 - 12:00 | Group Photo |
| 12:00 - 1:00 | Lunch |
| 1:00 - 2:00 | Lecture X-ray Generation/Detectors D. M. Mills Argonne National Laboratory (2) |
| 2:00 - 2:15 | Break |
| 2:15 - 3:15 | Lecture Continued X-ray Generation/Detectors |
| 3:30 - 5:30 | Safety Training/Tour IPNS Safety Training (Building 360, Room L119) IPNS Tour |
| 6:00 | Shopping Bus |

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Program - Week 1 (as of 8/1/07)

| Time/Date | Tuesday August 14 | Wednesday August 15 | Thursday August 16 | Friday August 17 | Time/Date | Saturday August 18 | Sunday August 19 |
|---------------|--|--|--|--|---------------|---|---------------------|
| 8:30 - 9:30 | Lecture Continued Interaction of X-rays and Neutrons with Matter S. K. Sinha University of California, San Diego (1) | Lecture Neutron Generation/ Detection J. M. Carpenter Argonne National Laboratory (4) | Lecture Single Crystal Diffraction T. F. Koetzle Argonne National Laboratory (6) | Lecture Magnetic Scattering I: Fundamentals C. F. Majkrzak National Institute of Standards and Technology (8) | 9:00 - 10:00 | Lecture X-ray Absorption Fine Structure (EXAFS) G. B. Bunker Illinois Institute of Technology (10) | Free Time |
| 9:30 - 9:45 | Break | Break | Break | Break | 10:00 - 10:15 | Break | |
| 9:45 - 10:45 | Lecture Continued Interaction of X-rays and Neutrons with Matter | Lecture Continued Neutron Generation/ Detection | Lecture Continued Single Crystal Diffraction | Lecture Continued Magnetic Scattering II: Applications | 10:15 - 11:15 | Lecture Continued X-ray Absorption Fine Structure (EXAFS) | |
| 10:45 - 11:00 | Break | Break | Break | Break | 11:15 - 12:30 | Early Lunch | |
| 11:00 - 12:00 | Lecture X-ray Instrumentation D. M. Mills Argonne National Laboratory (3) | Lecture Neutron Instrumentation I. S. Anderson Oak Ridge National Laboratory (5) | Lecture Reflectivity C. F. Majkrzak National Institute of Standards and Technology (7) | Lecture Inelastic Neutron Scattering R. Osborn Argonne National Laboratory (9) | 12:30 - 6:00 | Experiment 2B See attached "Experiments Schedule" | |
| 12:00 - 1:15 | Lunch | Lunch | Lunch | Lunch | | | |
| 1:15 - 2:15 | Lecture Continued X-ray Instrumentation | Lecture Continued Neutron Instrumentation | Lecture Continued Reflectivity | Lecture Continued Inelastic Neutron Scattering | | | |
| 2:15 - 2:30 | Break | Break | Break | Break | | | |
| 2:30 - 6:30 | Safety Training/Tour APS Safety Training APS Tour | Experiment 1 Introduction Experiment 1A See attached "Experiments Schedule" | Experiment 1B See attached "Experiments Schedule" | Experiment 2 Introduction Experiment 2A See attached "Experiments Schedule" | 6:00 | Picnic (Location TBD) | |

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Program - Week 2 (as of 8/1/07)

| Time/Date | Monday August 20 | Tuesday August 21 | Wednesday August 22 | Thursday August 23 | Friday August 24 | Saturday August 25 |
|---------------|---|---|---|--|--|--|
| 8:30 - 9:30 | Lecture Small Angle Scattering (SAS) P. Thiyagarajan Argonne National Laboratory (11) | Lecture Powder Diffraction J. J. Rhyne Los Alamos National Laboratory (14) | Lecture Understanding Materials Behavior Using Neutron Diffraction D. W. Brown Los Alamos National Laboratory (18) | Lecture Imaging S. R. Stock Northwestern University (21) | Lecture Real/Reciprocal Space Complementarity J. M. Gibson Argonne National Laboratory (22) | School participants depart for home |
| 9:30 - 9:45 | Break | Break | Break | Break | Break | |
| 9:45 - 10:45 | Lecture Continued Small Angle Scattering | Lecture Applications of Powder Diffraction Methods J. J. Rhyne Los Alamos National Laboratory (15) | Lecture Continued Understanding Materials Behavior Using Neutron Diffraction | Lecture Continued Imaging | Lecture Continued Real/Reciprocal Space Complementarity | |
| 10:45 - 11:00 | Break | Break | Break | Break | Break | |
| 11:00 - 12:00 | Lecture Introduction to Inelastic X-ray Scattering C. Burns Western Michigan University (12) | Lecture Diffuse Scattering G. E. Ice Oak Ridge National Laboratory (16) | Lecture Coherent X-ray Scattering L. B. Lurio Northern Illinois University (19) | 11:00-11:30 Free Time | Preparation of Reports | |
| 12:00 - 1:15 | Lunch | Lunch | Lunch | 11:30-12:30 Early Lunch | Lunch | |
| 1:15 - 2:15 | Lecture Neutron Sources J. J. Rhyne Los Alamos National Laboratory (13) | Lecture Synchrotron Sources G. E. Ice Oak Ridge National Laboratory (17) | Lecture Nuclear Resonant Inelastic X-ray Scattering (NRIXS) W. Sturhahn Argonne National Laboratory (20) | 12:30-5:30 Experiment 4B See attached "Experiments Schedule" | 1:00-5:30 Student Presentations | |
| 2:15 - 2:30 | Break | Break | Break | | | |
| 2:30 - 9:30 | Experiment 3 Introduction Experiment 3A See attached "Experiments Schedule" | Experiment 3B See attached "Experiments Schedule" | Experiment 4 Introduction Experiment 4A See attached "Experiments Schedule" | Reception/Banquet Argonne Guest House Building 460 6:00 p.m. - Reception 6:30 p.m. - Dinner | 6:00 School Closing Picnic (Location TBD) | |