

MONDAY, JUNE 12

SESSION 1 – Plenary I

Discussion Leader: A. Bernstein (LLNL, USA)

- 8:00 Welcoming Remarks – Anna Erickson and Adam Bernstein**
- 8:15 David Nygren (UT Arlington, USA)**
Why is There Something, Rather Than Nothing, and What Does Neutrino-less Double Beta Decay Have to do with That? (95)
- 8:50 Frank Calaprice (Princeton University, USA)**
Development of Low Background Methods for Detection of Rare Low Neutrino and Dark Matter Signals (98)
- 9:25 Cameron Geddes (LBL, USA)**
Near-monoenergetic Photon Sources for Nonproliferation Applications (67)
- 10:00 Coffee break**

SESSION 2 – Plenary II

Discussion Leader: A. Erickson (Georgia Tech, USA)

- 10:30 Mats Lindroos (European Spallation Source ERIC, Sweden)**
The Groundbreaking Activities of the European Spallation Source – ESS ERIC (57)
- 11:05 Markus Roth (Technische Universität Darmstadt, Germany)**
Recent Advances in Laser-Based Neutron Sources (66)
- 11:40 Alberto Andrichetto (LNL-INFN, Italy)**
The ISOLPHARM Project: New ISOL-Production Method of High Specific Activity Beta-Emitting Radionuclides as Radiopharmaceutical Precursors (100)
- 12:15 Lunch, Inter-Session**
- 16:30 Coffee**

SESSION 3 – Nuclear Detectors for Basic Scientific Research I

Discussion Leader: D. Nygren (UT Arlington, USA)

- 17:00 Fredrik Tovesson (LANL, USA)**
The MegaSPIDER Detector System for Fission Product Yield Measurements (5)
- 17:25 Vladimir Yurevich (JINR, Russian Federation)**
Development of Trigger and Start Detectors for Experiments with High-energy Heavy Ions at JINR (7)
- 17:50 Catalin Matei (ELI-NP, Romania)**
Neutron Detectors for the Gamma Beam Intensity and Polarization Monitoring at ELI-NP (32)
- 18:15 Huirong Qi (IHEP, CAS, China)**
Status of the 2D Multi-Wire Proportional Chamber Detector for China Spallation Neutron Source (18)
- 18:40 Luigi Cosentino (INFN – LNS, Italy)**
A new Proton Recoil Telescope for the nTOF@CERN facility (58)
- 19:05 Spyridon Margetis (Kent State University, USA)**
Tracking Challenges and Novel Approaches in High Energy and High Track Density Environments (13)
- 20:15 Dinner**

TUESDAY, JUNE 13

SESSION 4 – Dosimetry, Radiological Safety and Biological Applications

Discussion Leader: D. Zafiroopoulos (LNL-INFN, Italy)

- 8:00 Evangelos Gazis (NTUA, Greece)**
EDUSAFE Project: Control System (CS) and Data Acquisition (DAQ) Architecture for the Radiation Background Monitoring of a Personnel Safety System in the ATLAS Cavern (21)
- 8:25 Silvia Barros (Sejong U., RoK)**
Response Assessment of a New Albedo Neutron Dosimeter for Health Personnel (48)
- 8:50 Elena Iliescu (IFIN-HH, Romania)**
Dosimetry for Radiological Protection at the New Research Facility, ELI-NP (35)
- 9:15 Graham Peaslee (U. Notre Dame, USA)**
Using PIGE to Screen for an Environmental Toxin (28)
- 9:40 Alex Hermanne (Vrije Universiteit Brussel, Belgium)**
The Influence of the “New” CRP on Monitor Reactions for Charged Particle Beams (25)

10:05 Coffee break

10:05 – 17:00 POSTER I (SESSION 5)

- 1) S. Santos** *Synthesis, Processing and EPR Response of $Y_{1.98}Eu_{0.02}O_3$ Microrods (1)*
- 2) Li, Zhihui** *Ion Optic Design of the Microprobe Beam Line of Sichuan University (14)*
- 3) H.D. Choi** *Analysis of Uranium by Using HyperGam-U (24)*
- 4) S. van der Veeke** *A Reactor-Status Effect on the β^+ Decay Rate of ^{22}Na (40)*
- 5) R. Bugoi** *Identifying the Chaîne Opératoire of Prehistoric Pottery Using Imaging Methods and Experimental Archeology (42)*
- 6) K. Sihelská** *Identification of Microscopic Uranium Particles Using Fission Tracks in Nuclear Solid State Detectors (54)*
- 7) Zhang, Yingzeng** *A Compton Camera using DSSD and CsI(Tl) for Radioactive Waste Detection (77)*
- 8) J. Khorsandi** *Design of a Neutron Radiography Beam Line for Isfahan MNSR Reactor (83)*

SESSION 6 – Accelerators & Neutron Generators, Applied Antineutrino Physics

Discussion Leader: C. Geddes (LBL, USA)

- 10:35 Nick Gazis (European Spallation Source ERIC, Sweden)**
ESS Accelerator Installation Strategy and Non-Destructive Testing Implementation (39)
- 11:00 Aldo Zenoni (INFN-LNL, Italy)**
Experimental Study of Materials Radiation Resistance in Reactor Mixed Fields for the Construction of the SPES Facility at the Legnaro National Laboratories of INFN (97)
- 11:25 Steven Dazeley (LLNL, USA)**
Antineutrino Detection Based on 6Li -doped Pulse Shape Sensitive Plastic Scintillator (22)
- 11:50 Adam Bernstein (LLNL, USA)**
WATCHMAN: A WATER Cherenkov Monitor of ANtineutrinos (102)
- 12:15 Steven van der Veeke (MEDUSA SENSING, Netherlands)**
Monte-Carlo Simulations as a Tool to Understand Gamma-ray Coincidence Spectra: ^{22}Na Decay Inside a Well-counter (76)

12:40 Lunch, Inter-Session

16:30 Coffee break

SESSION 7 – Novel Detectors and Materials I

Discussion Leader: M. Ojaruega (DTRA, USA)

17:00 Belkis Cabrera-Palmer (SNL, USA)
Single-Volume Neutron Scatter Camera Simulation Results (92)

17:25 Hongxing Jiang (TTU, USA)
High Efficiency and High Sensitivity Thermal Neutron Detectors Based on Hexagonal BN Epilayers (8)

17:50 Alessandro Borella (SCK•CEN, Belgium)
Characterization and Monte Carlo simulations for a CLYC detector (12)

18:15 Enrico Bagli (INFN-SF, Italy)
Measurement of the Enhancement of the Nuclear Interaction Yield with Crystalline Targets at Cyclotron Energies (2)

18:40 Shaul Barkan (HHT, USA)
Performance of an Advanced Silicon Drift Detector with Ultra-Fast Pulse Processing (27)

20:15 Dinner

WEDNESDAY, JUNE 14 – Free day

Dinner at your leisure

THURSDAY, JUNE 15

SESSION 8 – Detection of Fissile Material and Contraband I

Discussion Leader: P. Rose (Georgia Tech, USA)

8:00 Richard Lanza (MIT, USA)
Generation and Detection of Neutrons and Monoenergetic Gamma Rays for Inspection for Nuclear Threats (83)

8:25 Les Nakae (LLNL, USA)
Fast Neutron and Gamma Ray Detection and Multiplicity Counting with LLNL Liquid Scintillator Array (38)

8:50 Joseph Harms, (Georgia Tech, USA)
Large Scale Imaging Simulations for Active Interrogation (43)

9:15 Evan Sengbusch (Phoenix Nuclear Labs, USA)
Explosive Hazard Detection with a High Yield DD Neutron Generator (62)

9:40 Igor Jovanovic (U. Michigan, USA)
Prompt and Delayed Fission Neutrons in Active Interrogation by Monoenergetic and Multimodal Radiation Sources (37)

10:05 Coffee break

10:05 – 17:00 POSTER II (SESSION 9)

1) J. Lorinčik *A Comparative Study for the Identification of Microscopic Uranium Particles Using Fission Track Analysis, SEM-EDX, and SIMS (84)*

2) V. Variale *Neutron Imager with Micro Channel Plates (MCP) in Electrostatic Mirror Configuration: Experimental Test with Radiation Source (94)*

3) S. Santos *Dosimetric Evaluation Employing the Techniques of TL and OSL with Different Thermoluminescent Materials for Clinical Evaluation of Extremities Doses using Electrons Beams Applied to Total Irradiation of Skin Treatments (52)*

4) M. Blood *Determination of Radioxenon Emanation Coefficient in U_3O_8 by Neutron Activation Analysis (64)*

5) D. Strivay *PIXE-PIGE Analysis of Merovingian and Carolingian Glass Artefact (68)*

6) K. Lee *Preliminary Evaluation of Decommissioning Wastes for the First Commercial Nuclear Power Reactor in South Korea (75)*

7) J. Sagretti *Acceptance of Irradiated Food by Individuals using Food Banks in Brazil (91)*

8) K. Gamage *Organic Liquid Scintillators Based Source Localisation in Radiation Monitoring (101)*

SESSION 10 – Nuclear Safeguards, Security and Forensics

Discussion Leader: M. Joyce (Lancaster U., UK)

10:35 Mauro Licata (Lancaster U., UK)
Combined Fast-Neutron and Gamma-ray Computed Tomography: A Single Modality with which to Discern both Nuclear Materials and Contrived Shielding Configurations? (16)

11:00 Steven Biegalski (UT Austin, USA)
Radioxenon Imprinting (47)

11:25 Dan Dale (Idaho State University, USA)
Studies of Prompt Diagnostic Signatures of Nuclear Detonations Using MeV Electron Beams (99)

11:50 Matthew Paul (UT Austin, USA)
Adsorptive Transport of Noble Gas Tracers in Porous Media (49)

12:15 Iyabo Usman (U. Witwatersrand, South Africa)
Fingerprinting of the Commercial Nuclear Reactor Forensics using Origen-S Modeling Code (44)

12:40 Violeta Iancu (ELI-NP, Romania)
Nondestructive Material Inspections Using Brilliant Quasi-monoenergetic Gamma Beams at ELI-NP (30)

13:05 Lunch, Inter-Session

16:30 Coffee break

SESSION 11 – Nuclear Detectors for Basic Scientific Research II

Discussion Leader: S. Dazeley (LLNL, USA)

17:00 Shakir Zeinalov (JINR, Russian Federation)
Position Sensitive Twin Ionization Chamber for Nuclear Fission Investigation (20)

17:25 Simonetta Marcello (Torino U./INFN, Italy)
The New Inner Tracker Based on Cylindrical GEM Detectors for the BESIII Experiment (46)

17:50 Brian Lenardo (Univ. of California, Davis, USA)
Liquid Xenon Scintillation Measurements and Pulse Shape Discrimination in the LUX Dark Matter Detector (93)

18:15 Cristiano Lino Fontana (U. of Padua, Italy)
A Distributed Data Acquisition System for Nuclear Detectors (85)

18:40 Rosie Newton (Lancaster U., UK)
Investigating Artifacts Associated with β Particle Interactions in Charge Coupled Devices (41)

20:15 Dinner

FRIDAY, JUNE 16

SESSION 12 – Medical, Biological, Laboratory and Industrial Applications

Discussion Leader: R. Lanza (MIT, USA)

8:00 Andy Buffler (Univ. of Cape Town, South Africa)
Positron Emission Particle Tracking: A Powerful Nuclear Application for Flow Studies (11)

- 8:25 David Strivay (U. de Liege, Belgium)**
Testing of Materials under Space Radiation Environment Using Particle Accelerators of IPNAS (70)
- 8:50 Justin Delaney (CSIRO, Australia)**
Measurement of Formation Cross-Sections and Decay Properties for Short-lived Isomers Produced in Photonuclear Interactions (79)
- 9:15 Evan Sengbusch (Phoenix Nuclear Labs, USA)**
Production of Medical Isotopes with a Driven Subcritical Assembly (61)
- 9:40 Jiangfeng Song (China Academy of Engineering and Physics, China)**
Inhibition of Proliferation of Gastric Carcinoma Cells in vitro with Deuterium Depleted Water Treatment (55)

10:05 Coffee break

SESSION 13 – Novel Detectors & Materials II

Discussion Leader: B. Cabrera-Palmer (SNL, USA)

- 10:35 Julie Logan (AFIT, USA)**
Rotating Scatter Mask Assembly for Gamma Source Imaging (51)
- 11:00 Zeljko Pastuovic (Australian Nuclear Science and Technology Organisation, Australia)**
Radiation Damage Studies in Detector Grade n-Type 4H-SiC Schottky Barrier Diodes Exposed to Ion and Neutron Irradiation Using Nuclear Techniques and Transient Spectroscopies (80)
- 11:25 Gigi Cappello (INFN, Italy)**
Collimation and Characterization of ELI-NP Gamma Beam (74)
- 11:50 Mitaire Ojaruega (DTRA, USA)**
Research and Development Undertakings at DTRA (26)
- 12:15 Sandra Moretto (U. of Padua, Italy)**
An Integrated Detector Assembly for Detection and Discrimination of Fast Neutrons, Thermal Neutrons and Gamma-rays (87)

12:40 Lunch, Inter-Session

16:30 Coffee break

SESSION 14 – Detection of Fissile Material and Contraband II

Discussion Leader: I. Jovanovic (U. Michigan, USA)

- 17:00 Victor Orphan (Spectral Labs Inc., USA)**
HiRIS – a High-Resolution Upgrade of VACIS Mobile Non-Intrusive Inspection Systems (10)
- 17:25 Brian Henderson (MIT, USA)**
Detection of Special Nuclear Materials Using Multiple Monoenergetic Gamma Radiography (89)
- 17:50 Jason Nattress (U. Michigan, USA)**
Spectroscopic Multi-modal Material Identification using a Nuclear Reaction-Based Quasi-Monoenergetic Source (36)
- 18:15 Felix Eduardo Pino Andrades (U. Padova, Italy)**
Advances on the Development of the Detection System of the C-BORD's Rapidly Relocatable Tagged Neutron Inspection System (RRTNIS) (86)
- 18:40 Paul Rose (Georgia Tech, USA)**
Searching for Special Nuclear Material with Discrete Energy Nuclear Reaction Based Sources and Cherenkov Detector Array (45)

20:00 Cocktails/ Gala Dinner



**INTERNATIONAL CONFERENCE
ON APPLICATIONS OF NUCLEAR
TECHNIQUES**

CONFERENCE PROGRAM

CONFERENCE CHAIRS

Anna Erickson (Georgia Tech, USA)
Adam Bernstein (LLNL, USA)

ADVISORY COMMITTEE

George Vourvopoulos (WKU Emeritus, USA)
Marianne Hamm (R&M Technical Enterprises, USA)
Robert Hamm (R&M Technical Enterprises, USA)
Rico Chandra (Arktis Radiation Detectors)
Nick Gazis (European Spallation Source, Sweden)
Igor Jovanovic (University of Michigan, USA)
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Mitaire Ojaruega (ICISS/DTRA, USA)
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Karl van Bibber (UC Berkeley, USA)
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