

Last Updated 2023 Apr 12

Council on Ionizing Radiation Measurements and Standards
“Mitigating Challenges in Radiation Technologies”
2023 Annual Meeting Agenda

April 17-19, 2023

In-Person meeting held at The Universities at Shady Grove
Building 2 Conference Center, 9630 Gudelsky Drive, Rockville, MD

Monday, April 17, 2023 (All times are EDT)

Morning Plenary Session in Main Ballroom (1st floor)

8:00	Registration Coffee provided	(60 min)
8:30	Welcome	(5 min)
8:30	<i>President’s Welcome & Sponsor Introductions</i> Spencer Mickum, PhD, President, CIRMS	
8:35	<i>Introduction to Needs Report</i> Amitava Adhikary, PhD, 1 st Vice President, CIRMS	(5 min)
8:40	Plenary Session	
8:40	<i>The 2021 National Academies Study on Radioactive Sources and Alternative Technologies</i> Charles Ferguson, PhD – Senior Director Nuclear and Radiation Studies Board National Academies of Sciences, Engineering, and Medicine	(30 min)
9:10	<i>Preview of the New Developments Underway in the Division of Radiation Physics</i> Alan Thompson, PhD – Acting Division Chief of Radiation Physics National Institute of Standards and Technology (NIST)	(30 min)
9:40	<i>The Role of Radioactive Sources in Ionizing Radiation Metrology</i> Malcolm McEwen, PhD – Team Leader, Medical and Industrial Dosimetry National Research Council of Canada	(30 min)
10:10	Morning Coffee Break	(20 min)
10:30	Plenary Session	
10:30	<i>Flash Therapy with Mobetron Electron Beams</i> Emil Schueler, PhD, DABR – Assistant Professor, Department of Radiation Physics The University of Texas MD Anderson Cancer Center	(30 min)
11:00	<i>Development of Radiation Countermeasures for Acute Radiation Syndrome: Current Status of Biomarker Identification and Validation</i> Vijay Singh, PhD – Professor, Department of Pharmacology and Molecular Therapeutics Uniformed Services University of the Health Sciences (USUHS)/Armed Forces Radiobiology Research Institute (AFRRI)	(30 min)
11:30	5-minute break	
11:35	Poster Blitz Session Session Chair: Amitava Adhikary, PhD, 1 st Vice President, CIRMS	(25 min)
12:00	Poster Viewing Interactive poster session	(30 min)
12:30	Lunch Boxed lunch provided	(60 min)
1:30	Concurrent breakout sessions. See table on next page	(90 min)
3:00	Afternoon break and poster viewing Coffee and snacks provided	(30 min)
3:30	Concurrent breakout sessions. See table on next page	(90 min)
5:00	Adjourn Day 1	

Monday, April 17, 2023 (All times are EDT) – Three Concurrent Sessions

Session	Medical Applications	Radiation Processing & Material Effects	Radiation Protection & Homeland Security
Room	Main Ballroom (1 st floor)	Room 1052 (1 st floor)	Room 1032 (1 st floor)
Chairs	Wesley Culberson, PhD, University of Wisconsin-Madison Matthew Mille, PhD, National Institutes of Health Regina Fulkerson, PhD, Varian	Ileana Pazos, PhD, National Institutes of Standards and Technology Kim Morehouse, PhD, US Food and Drug Administration-Retired Amit Adhikary, PhD, Oakland University	Stephanie Healey, PhD, US Food and Drug Administration
Time	FLASH RADIOTHERAPY <i>Dosimetry challenges in the clinical translation of FLASH radiation</i> John Wong, PhD Johns Hopkins University	DNA DAMAGE FROM IONIZING RADIATION <i>Ne-22 Ion-beam radiation damage to DNA: From initial free radical formation to resulting DNA base damage</i> Miral Dizdaroglu, PhD National Institute of Standards and Technology	Time METHODS OF RADIOCHEMICAL SEPARATION AND MEASUREMENT <i>Detection Capability for Determination of Sr-89 and Sr-90 by Liquid Scintillation Counting</i> Ezekiel Blain, PhD NY State Health
1:30			
1:50	Flash Therapy Dosimetry Standards Rongxiao Zhang, PhD, DABR Dartmouth College	Nanopore Sensors for Measuring Radiation-Induced DNA Damage Joey Robertson, PhD National Institute of Standards and Technology	2:00 Development of Voluntary Consensus Standards and Measurement Support for NORM / TENORM Evgeny Taskaev, PhD and Donovan Porterfield Eckert and Ziegler Analytics, Inc. and Los Alamos National Laboratory
2:10	Experience with the eFLASH Mobetron Sagarika Jain, MS, DABR The Ohio State University	Study of backbone and base pair bond breaking in DNA during proton beam irradiation Noel Guardala, PhD The George Washington University	
2:30	Needs Report Discussion	Needs Report Discussion	2:30 Needs Report Discussion
3:00	Afternoon break and poster viewing		
3:30	BIODOSIMETRY - Joint Medical & RPME Session in Main Ballroom (1st floor) <i>Current Status of Emergency Biodosimetry</i> William F. Blakely, PhD Armed Forces Radiobiology Research Institute (AFRRI)		3:30 GAMMA ANALYSIS <i>Triggered or Continuous Autonomous Gamma Spectral Acquisition and Analysis</i> Frazier Bronson, CHP Mirion
3:50	Biodosimetry - challenges to product development and regulatory approval Maria Moroni, PhD Biomedical Advanced Research and Development Authority, Administration for Strategic Preparedness and Response		4:00 Advances in Homeland Security Instrumentation: Detecting and Identifying Special Nuclear Material John Smalling ORTEC, a business unit of Ametek Advanced Measurement Technologies
4:10	The NIAID/RNCP Biodosimetry Program: The Need for Predictive Biodosimetry Merriline Satyamitra, PhD National Institute of Allergy and Infectious Diseases, National Institutes of Health		
4:30	A Novel Countermeasure Against Ionizing Radiation-Induced Bone Loss Melanie Coathup, PhD University of Central Florida		4:30 The Industry Need for Updated Gamma Spectroscopy Guidance Billy Cox Radiation Safety & Control Services
4:50-5:10	NIH/NIAID Radiation and Nuclear Countermeasures Program Portfolio-Wide Radiation Dosimetry Harmonization Program Thomas Winters, PhD National Institute of Allergy and Infectious Diseases, National Institutes of Health		5:00 Needs Report Discussion
	Adjourn Day 1		



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Tuesday, April 18, 2023 (All times are EDT)

Morning Plenary Session in Main Ballroom (1st floor)

8:00	Registration Coffee provided	(60 min)
9:00	Welcome	(10 min)
9:00	<i>President's Welcome</i> Spencer Mickum, PhD, President, CIRMS	
9:10	Plenary Session	
9:10	<i>The IAEA Dosimetry Laboratory - Calibration capabilities, Services Provided to the Member States and Development of the Robotic Calibration Bench</i> Ladislav Czap, MS – IAEA Dosimetry Laboratory International Atomic Energy Agency	(30 min)
9:40	<i>Significance and Use of ANSI Standards for the Use of Portable Detectors</i> Edward Walker, CHP, CSP, PE – Chair ANSI N323AB-2013 Consultant	(30 min)
10:10	Morning Coffee Break	(20 min)
10:30	Plenary Session	
10:30	<i>AAMI TIR 104:202 Guidance on Transferring Health Care Products Between Radiation Sterilization Sources</i> Mark Smith, PhD – Managing Director Ionaktis, LLC	(30 min)
11:00	<i>Machine Based Release</i> Aaron Starkey – Sales Director IBA Industrial Solutions	(30 min)
11:30	Panel Discussion	(30 min)
11:30	<i>Radiation Processing Panel</i> Mark Smith, PhD, Ionaktis, LLC Aaron Starkey, IBA Industrial Solutions Larry Nichols, Steri-Tek Clarence Murray III, PhD, Center for Devices and Radiological Health (CDRH), U.S. FDA	
12:00	CIRMS Photo / Lunch Group photo followed by lunch provided	(90 min)
1:30	Concurrent breakout sessions. See table on next page	(90 min)
3:00	Afternoon break and poster viewing Coffee and snacks provided	(30 min)
3:30	Concurrent breakout sessions. See table on next page	(90 min)
5:00	Adjourn Day 2	
5:30	No Host Social Gathering at RIO Lakefront Bring your name tag and pay your own way. Reservations and transportation on own. Yard House , 211 Rio Blvd, Gaithersburg, MD -OR- Uncle Julio's Fine Mexican Food , 231 Rio Blvd, Gaithersburg, MD	

Tuesday, April 18, 2023 (All times are EDT) – Three Concurrent Sessions

Session	Medical Applications	Radiation Processing & Material Effects	Radiation Protection & Homeland Security
Room	Main Ballroom (1 st floor)	Room 1052 (1 st floor)	Room 2062 (2 nd floor)
Chairs	Matthew Mille, PhD, National Institutes of Health Regina Fulkerson, PhD, Varian Wesley Culberson, PhD, University of Wisconsin-Madison Sergio Morato Rafet, PhD, National Institutes of Health	Ileana Pazos, PhD, National Institutes of Standards and Technology Kim Morehouse, PhD, US Food and Drug Administration-Retired	Stephanie Healey, PhD, US Food and Drug Administration
Time	ADVANCES IN MONTE CARLO RADIATION TRANSPORT	SIMULATION & NOVEL APPLICATIONS OF RADIATION PROCESSING	Time
1:30	<i>Spatiotemporal patient-specific dosimetry using Monte Carlo simulations for radioactive iodine therapy</i> Jungwook Shin, PhD National Cancer Institute/NIH	<i>Monte Carlo Simulations as a Product Design Tool</i> Tobias Funk, PhD Triple Ring Technologies	1:30 COUNTING SOURCE PREPARATION <i>Electrodeposition or Micro-Precipitation? With or without hydrofluoric acid? ~Consideration of Alpha Source Preparation</i> Hiromu Kurosaki, PhD Oak Ridge National Laboratory
1:50	<i>4D Monte Carlo simulation to assess the impact of respiratory motion during radiation therapy</i> Emily Heath, PhD Carleton University	<i>Simulating Dynamic Irradiation of Complex Systems Using RayXpert®'s Built-in Energy-angle Spectrum</i> Nicolas Mary, MS TRAD	2:00 3D Scanning and Printing of Radiation Sources Steve Biegalski, PhD Georgia Institute of Technology
2:10	<i>GPU-based multi-scale Monte Carlo simulations for radiation transport in medical imaging and radiation therapy</i> Xun Jia, PhD, MS Johns Hopkins University	<i>Degradation of Microcystin, MIB, and Geosmin in Drinking Water by Irradiation</i> Mark Driscoll, PhD SUNY College of Environmental Science and Forestry	2:30 Needs Report Discussion
2:30	Needs Report Discussion	<i>Preliminary Development in the Synthesis of Alumina-acrylic Polymer Nanoparticles for Immobilizing Chloride Ion Transport in Concrete</i> Aiysha Ashfaq University of Maryland	
3:00	Afternoon break and poster viewing		
3:30	CALIBRATION OF MEDICAL X RAY DEVICES <i>Design of 3-D Printed, Highly Tissue Equivalent Rodent Phantoms, and Use for Valid Comparison of Cs-137 and X-ray Irradiators</i> Maddison Heine Pacific Northwest National Laboratory	ACHIEVING GOALS OF WORKING GROUP AND FUTURE VISION <i>Discussion of Capabilities of a New Self-Contained, High Dose Rate Co-60 Irradiator: the GR420</i> Zach Hope Hopewell Designs, Inc.	3:30 DOSIMETRY <i>Debunking Myths and Urban Legends in Ionizing Radiation Dosimetry</i> Chris Passmore, CHP Radiation Detection Company
3:45	<i>National Calibration Needs: X-Ray Multimeters and Mammography</i> John Stasko, MS University of Wisconsin-Madison	<i>Review of Changes to the High Dose Program at NIST</i> Ileana Pazos, PhD NIST	4:00 <i>CT-Dose: a graphical user interface for dose calculation using MC-GPU Monte Carlo code</i> Sergio Morato Rafet, PhD National Cancer Institute/NIH
4:00	<i>Mitigating Transition Challenges from Gamma Irradiator to X-ray Irradiators</i> Jacob Kamen, PhD Mount Sinai Health System	Needs Report Discussion and Goals of Radiation Processing & Materials Effects	4:30 Needs Report Discussion
4:15	Needs Report Discussion		
5:00	Adjourn Day 2		
5:30	No Host Social Gathering at RIO Lakefront Bring your name tag and pay your own way. Reservations and transportation on own. Yard House , 211 Rio Blvd, Gaithersburg, MD -OR- Uncle Julio's Fine Mexican Food , 231 Rio Blvd, Gaithersburg, MD		

Wednesday, April 19, 2022 (All times are EDT)

Morning Plenary Session in Main Ballroom (1st floor)

8:00	Registration Coffee provided	(60 min)
9:00	Welcome	(10 min)
9:00	President's Welcome Spencer Mickum, PhD, President, CIRMS	
9:10	Award Presentations	
9:10	Presentation of Awards for Junior Investigator Competition	(5 min)
9:15	Presentation of Caswell Award	(5 min)
9:20	Plenary Session	
9:20	International Ionizing Radiation Metrology: The Role of a National Measurement Institute to Meet Challenges in Radiation Technologies Lisa Karam, PhD – Senior Scientist National Institute of Standards and Technology (NIST)	(30 min)
9:50	Discussion of Linear Non-Threshold Needs John Cardarelli, PhD – President, Health Physics Society	(30 min)
10:20	Morning Coffee Break	(20 min)
10:40	Plenary Session	
10:40	Discussion of Needed Technologies for Fusion Power Plant Samuel Wurzel, MS – Technology to Market Advisor Advanced Research Projects Agency–Energy (ARPA-E)	(30 min)
11:10	Communication on Nuclear Topics and Challenges to Public Perception Shelly Leshner, PhD – Professor, Host of the Podcast "My Nuclear Life" University of Wisconsin – La Crosse	(30 min)
11:40	Closing Remarks	
11:40	President's Closing & Needs Report Spencer Mickum, PhD, President, CIRMS	(5 min)
11:45	Adjourn Day 3 Lunch on your own	
1:00	NIST Radiation Physics Laboratories Tour – **Advanced Registration Required & Registration is now closed** **Transportation on own** 100 Bureau Dr, Gaithersburg, MD 20899 Arrive at NIST Visitor Center @ 1:00 pm, Lab Tour 1:30 to ~4:00 pm <ul style="list-style-type: none">• Advanced registration required. Registration is now closed.• Conduct Daily Health Screening Checklist on Wednesday morning.• All visitors must present photo identification at the visitor center.• Lawful Permanent Resident visitors must present an alien registration card.• Non-Permanent Resident visitors must present a valid passport.• Vehicle registration or rental agreement upon arrival.• Rideshare transportation (e.g. Uber or Lyft) must drop you off at NIST Visitor Center and then walk to building 245 (~1 mile).	(180 min)

Meeting Content

Abstracts for the talks and posters area available on our meeting content website if provided by the presenters. Presentation slides and poster files will be posted after the meeting if permission is granted.

<https://cirms.org/2023-cirms-meeting>

Please scan to see meeting abstracts



Poster Session

Poster #	Abstract Title/Presenting Author
1	“Evaluation of GEANT4 Monte Carlo platform for absorbed dose calculation using alpha-emitting radionuclides” Ahtesham Ullah Khan, University of Wisconsin-Madison, akhan49@wisc.edu
2	“Energy and geometry-dependent corrections to dose variability across cell culture irradiations” Kevin Byrne (first submission), University of Maryland, KByrne@som.umaryland.edu
3	“Optimizing Ion Chamber-Based Dose Modulation of an Electron FLASH-enabled Linac” Kevin Byrne (second submission), University of Maryland, KByrne@som.umaryland.edu
4	“Uncertain Biokinetic Parameter Considerations in Stochastic Modeling of the Human Respiratory Tract System in Defense and Consequence Management Applications: Computational and mathematical tools leveraged for an expanded stochastic analysis of biokinetic model parameters” Emmanuel Mate-Kole, Georgia Institute of Technology, ematekole3@gatech.edu
5	“Non-Contact Scintillator Imaging Dosimetry for Total Body Irradiation in Radiotherapy” Alexander Niver, University of Wisconsin-Madison, apniver@wisc.edu
6	“Determination of Absorbed Dose to Water for the DaRT Brachytherapy Source in Monte Carlo” Sean Jollota, University of Wisconsin-Madison, jollota@wisc.edu
7	“Application of Liquid Scintillation and Gas-flow Proportional Counting Techniques for Simultaneous Detection of Alpha/beta Radioactivity in Food” Jingjing Pan, U.S. Food and Drug Administration, Jingjing.Pan@fda.hhs.gov
8	“X-Ray Multimeter Performance in Diagnostic Imaging Calibration Beams” John Stasko, University of Wisconsin-Madison, jstasko@wisc.edu
9	“Applications for and Advancements Towards a Deployable Emergency Response Dosimetry System (ERDS)” Ileana Pazos, National Institute of Standards and Technology, ileana.pazos@nist.gov
10	“Remote dose monitoring – Early phase study” Rao Papineni, University of Kansas Medical Center, drpapineni@pactandhealth.com
11	“Investigation of charge buildup in cabled detectors in the Small Animal Radiation Research Platform (SARRP)” Jocelyn Jackson, University of Wisconsin-Madison, jmackson8@wisc.edu
12	“A novel multifunctional radioprotective strategy using P7C3 as a countermeasure against ionizing radiation-induced bone loss” Fei Wei, University of Central Florida, Fei.Wei@ucf.edu