Reported by (Name):	Wesley Culberson
Organization:	University of Wisconsin - Madison
Position Title:	Associate Professor and UWADCL Director
Activity:	Council on Ionizing Radiation Measurements and Standards (CIRMS) Annual meeting
Meeting Dates:	April 17-19, 2023
Meeting Location:	The Universities at Shady Grove, Rockville, MD
Payment \$:	None requested for 2023
Reasons for Attending or not Attending	I am a technical expert on radiation dosimetry representing the interests and needs of the AAPM.
Issues from Previous Meetings or Year:	A number of radiation dosimetry standards were discussed at the previous annual meeting at NIST in Spring, 2022. The outstanding issues include radiobiology standards for Flash dosimetry, radiobiological experiments, targeted radionuclide therapy, and electronic brachytherapy dosimetry.
General Description of Activities of the Organization and/or Meeting:	CIRMS is a mutli-disciplinary non-profit organization which seeks to elevate the needs of all aspects in the field of ionizing radiation, drawing on the experience and knowledge of industry, academia, and government professionals. Through this collaborative group, the needs of our field are distributed to government agencies and potential funding sources.
Issues for AAPM:	CIRMS is working to create a Needs Report to present the needs for standardized dosimetry particularly in areas of radiation biology, targeted radionuclide therapy, and Flash therapy. There are also needs for more accurate radiation dosimetry in emergency biodosimetry and countermeasures.
Budget Request (\$):	N/A

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	(60 min)
	Coffee provided	<i>(</i> _)
8:30	Welcome	(5 min)
8:30	President's Welcome & Sponsor Introductions	
0.25	Spencer Mickum, PhD, President, CIRMS	(5
8:35	Introduction to Needs Report	(5 min)
0.40	Amitava Adhikary, PhD, 1* Vice President, Cikivis	
8:40	Plenary Session	(20
8:40	The 2021 National Academies Study on Radioactive Sources and Alternative Technologies	(30 min)
	Charles Ferguson, PhD – Senior Director Nuclear and Radiation Studies Board	
0.10	Review of the New Developments Underway in the Division of Partiation Physics	(20 min)
9.10	Alan Thompson, BhD Acting Division Chief of Padiation Division of Radiation Physics	(50 1111)
	National Institute of Standards and Technology (NIST)	
0.40	The Pole of Padioactive Sources in Ionizing Padiation Metrology	(20 min)
9.40	Malcolm McEwen, PhD – Team Leader, Medical and Industrial Dosimetry	(30 mm)
	National Research Council of Canada	
10:10	Morning Coffee Break	(20 min)
10:30	Plenary Session	(20)
10:30	Flash Therapy with Mobetron Electron Beams	(30 min)
	Emil Schueler, PhD. DABR – Assistant Professor, Department of Radiation Physics	(,
	The University of Texas MD Anderson Cancer Center	
11:00	Development of Radiation Countermeasures for Acute Radiation Syndrome: Current Status	(30 min)
	of Biomarker Identification and Validation	
	Vijay Singh, PhD – Professor, Department of Pharmacology and Molecular Therapeutics	
	Uniformed Services University of the Health Sciences (USUHS)/Armed Forces Radiobiology	
	Research Institute (AFRRI)	
11:30	5-minute break	
11:35	Poster Blitz Session	(25 min)
	Session Chair: Amitava Adhikary, PhD, 1 st Vice President, CIRMS	
12:00	Poster Viewing	(30 min)
	Interactive poster session	(,
12.20	Lunch	(60 min)
12:30	Lunch Deved lunch provided	(60 min)
	Boxed functi provided	
1:30	Concurrent breakout sessions. See table on next page	(90 min)
3:00	Afternoon break and poster viewing	(30 min)
	Coffee and snacks provided	
3:30	Concurrent breakout sessions. See table on next page	(90 min)
5:00	Adiourn Day 1	

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

Socion	Madical Applications		Radiation Processing &		Radiation Protection &
Session			Material Effects		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 1:30	FLASH RADIOTHERAPY Dosimetry challenges in the clinical translation of FLASH radiation John Wong, PhD Johns Hopkins University		DNA DAMAGE FROM IONIZING RADIATION Ne-22 Ion-beam radiation damage to DNA: From initial free radical formation to resulting DNA base damage Miral Dizdaroglu, PhD National Institute of Standards and Technology	Time 1:30	METHODS OF RADIOCHEMICAL SEPARATION AND MEASUREMENT Detection Capability for Determination of Sr-89 and Sr-90 by Liquid Scintillation Counting Ezekiel Blain, PhD NY State Health
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 Study of backbone and base pair bond breaking in DNA during	2:00	Development of Voluntary Consensus Standards and Measurement Support for NORM / TENORM Evgeny Taskaev, PhD and Donivan Porterfield
2:10	Experience with the eFLASH Mobetron Sagarika Jain, MS, DABR The Ohio State University		proton beam irradiation Noel Guardala, PhD The George Washington University Needs Report Discussion		Eckert and Ziegler Analytics, Inc. and Los Alamos National Laboratory
2:30	Needs Report Discussion			2:30	Needs Report Discussion
3:00	Afternoon break and poster viewing				
3:30	Afternoon break and poster viewing <u>BIODOSIMETRY - Joint Medical & RPME Session in Main Ballroom (1st 1 <i>Current Status of Emergency Biodosimetry</i> William F. Blakely, PhD Armed Forces Radiobiology Research Institute (AFRRI)</u>	floor	1	3:30	GAMMA ANALYSIS Triggered or Continuous Autonomous Gamma Spectral Acquisition and Analysis Frazier Bronson, CHP Mirion
3:30 3:30 3:50	Afternoon break and poster viewing BIODOSIMETRY - Joint Medical & RPME Session in Main Ballroom (1 st 1 Current Status of Emergency Biodosimetry William F. Blakely, PhD Armed Forces Radiobiology Research Institute (AFRRI) Biodosimetry - challenges to product development and regulatory app Maria Moroni, PhD Biomedical Advanced Research and Development Authority, Administra	floor prova	1 I for Strategic Preparedness and Response	3:30 4:00	GAMMA ANALYSIS Triggered or Continuous Autonomous Gamma Spectral Acquisition and Analysis Frazier Bronson, CHP Mirion Advances in Homeland Security Instrumentation: Detecting and Identifying Special Nuclear Material John Smalling
3:30 3:30 3:50 4:10	Afternoon break and poster viewing BIODOSIMETRY - Joint Medical & RPME Session in Main Ballroom (1st f Current Status of Emergency Biodosimetry William F. Blakely, PhD Armed Forces Radiobiology Research Institute (AFRRI) Biodosimetry - challenges to product development and regulatory app Maria Moroni, PhD Biomedical Advanced Research and Development Authority, Administra The NIAID/RNCP Biodosimetry Program: The Need for Predictive Biodo Merriline Satyamitra, PhD National Institute of Allergy and Infectious Diseases, National Institutes	floor orova ation osima) I for Strategic Preparedness and Response e try ealth	3:30	GAMMA ANALYSIS Triggered or Continuous Autonomous Gamma Spectral Acquisition and Analysis Frazier Bronson, CHP Mirion Advances in Homeland Security Instrumentation: Detecting and Identifying Special Nuclear Material John Smalling ORTEC, a business unit of Ametek Advanced Measurement Technologies
3:30 3:30 3:50 4:10 4:30	Afternoon break and poster viewing BIODOSIMETRY - Joint Medical & RPME Session in Main Ballroom (1st f Current Status of Emergency Biodosimetry William F. Blakely, PhD Armed Forces Radiobiology Research Institute (AFRRI) Biodosimetry - challenges to product development and regulatory app Maria Moroni, PhD Biomedical Advanced Research and Development Authority, Administration The NIAID/RNCP Biodosimetry Program: The Need for Predictive Biodo Merriline Satyamitra, PhD National Institute of Allergy and Infectious Diseases, National Institutes A Novel Countermeasure Against Ionizing Radiation-Induced Bone Loss Melanie Coathup, PhD University of Central Florida	floor prova ation osime s of H	ا I for Strategic Preparedness and Response etry ealth	3:30 4:00 4:30	GAMMA ANALYSIS Triggered or Continuous Autonomous Gamma Spectral Acquisition and Analysis Frazier Bronson, CHP Mirion Advances in Homeland Security Instrumentation: Detecting and Identifying Special Nuclear Material John Smalling ORTEC, a business unit of Ametek Advanced Measurement Technologies The Industry Need for Updated Gamma Spectroscopy Guidance Billy Cox Radiation Safety & Control Services
3:00 3:30 3:50 4:10 4:30 4:50-5:10	Afternoon break and poster viewing BIODOSIMETRY - Joint Medical & RPME Session in Main Ballroom (1st f Current Status of Emergency Biodosimetry William F. Blakely, PhD Armed Forces Radiobiology Research Institute (AFRRI) Biodosimetry - challenges to product development and regulatory app Maria Moroni, PhD Biomedical Advanced Research and Development Authority, Administra The NIAID/RNCP Biodosimetry Program: The Need for Predictive Biodo Merriline Satyamitra, PhD National Institute of Allergy and Infectious Diseases, National Institutes A Novel Countermeasure Against Ionizing Radiation-Induced Bone Loss Melanie Coathup, PhD University of Central Florida NIH/NIAID Radiation and Nuclear Countermeasures Program Portfolio Thomas Winters, PhD National Institute of Allergy and Infectious Diseases, National Institutes	floor prova ation osima s of H ss o-Wia s of H	1 for Strategic Preparedness and Response etry ealth de Radiation Dosimetry Harmonization Program ealth	3:30 4:00 4:30 5:00	GAMMA ANALYSIS Triggered or Continuous Autonomous Gamma Spectral Acquisition and Analysis Frazier Bronson, CHP Mirion Advances in Homeland Security Instrumentation: Detecting and Identifying Special Nuclear Material John Smalling ORTEC, a business unit of Ametek Advanced Measurement Technologies The Industry Need for Updated Gamma Spectroscopy Guidance Billy Cox Radiation Safety & Control Services Needs Report Discussion

<u>Tuesday, April 18, 2023 (All times are EDT)</u> Morning Plenary Session in Main Ballroom (1st floor)

8:00	Registration Coffee provided	(60 min)
9:00 9:00	Welcome President's Welcome Spencer Mickum, PhD, President, CIRMS	(10 min)
9:10 9:10	Plenary Session The IAEA Dosimetry Laboratory - Calibration capabilities, Services Provided to the Member States and Development of the Robotic Calibration Bench Ladislav Czap, MS – IAEA Dosimetry Laboratory International Atomic Energy Agency	(30 min)
9:40	Significance and Use of ANSI Standards for the Use of Portable Detectors Edward Walker, CHP, CSP, PE – Chair ANSI N323AB-2013 Consultant	(30 min)
10:10	Morning Coffee Break	(20 min)
10:30 10:30	Plenary Session AAMI TIR 104:202 Guidance on Transferring Health Care Products Between Radiation Sterilization Sources 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	Radiation Processing Panel 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

Soccion	Modical Applications		Radiation Processing &		Radiation Protection &
36331011	Medical Applications		Material Effects		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	COUNTING SOURCE PREPARATION
1:30	Spatiotemporal patient-specific dosimetry using Monte Carlo simulations for radioactive iodine therapy 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	Electrodeposition or Micro-Precipitation? With or without hydrofluoric acid? ~Consideration of Alpha Source Preparation Hiromu Kurosaki, PhD Oak Ridge National Laboratory
1:50	4D Monte Carlo simulation to assess the impact of respiratory motion during radiation therapy Emily Heath, PhD Carlotea University		Simulating Dynamic Irradiation of Complex Systems Using RayXpert ^{er} s Built-in Energy-angle Spectrum Nicolas Mary, MS	2.00	2D Scenning and Drinting of Dediction Sources
	caneton oniversity		TRAD	2:00	Steve Biegalski. PhD
2:10	GPU-based multi-scale Monte Carlo simulations for radiation transport in medical imaging and radiation therapy Xun Jia, PhD, MS Johns Hopkins University		Degradation of Microcystin, MIB, and Geosmin in Drinking Water by Irradiation Mark Driscoll, PhD SUNY College of Environmental Science and Forestry		Georgia Institute of Technology
2:30	Needs Report Discussion		Preliminary Development in the Synthesis of Alumina-acrylic Polymer Nanoparticles for Immobilizing Chloride Ion Transport in Concrete Aiysha Ashfaq University of Maryland	2:30	Needs Report Discussion
3:00	Afternoon break and poster viewing		· · · · ·		
3:30	CALIBRATION OF MEDICAL X RAY DEVICES Design of 3-D Printed, Highly Tissue Equivalent Rodent Phantoms, and Use for Valid Comparison of Cs-137 and X-ray Irradiators Maddison Heine Pacific Northwest National Laboratory		ACHIEVING GOALS OF WORKING GROUP AND FUTURE VISION Discussion of Capabilities of a New Self-Contained, High Dose Rate Co-60 Irradiator: the GR420 Zach Hope Hopewell Designs, Inc.	3:30	DOSIMETRY Debunking Myths and Urban Legends in Ionizing Radiation Dosimetry Chris Passmore, CHP Radiation Detection Company
3:45	National Calibration Needs: X-Ray Multimeters and Mammography John Stasko, MS University of Wisconsin-Madison		Review of Changes to the High Dose Program at NIST Ileana Pazos, PhD NIST	4:00	CT-Dose: a graphical user interface for dose calculation using MC- GPU Monte Carlo code Sergio Morato Rafet, PhD
4:00	Irradiators Jacob Kamen, PhD Mount Sinai Health System		Needs Report Discussion and Goals of Radiation Processing & Materials Effects	4:30	Needs Report Discussion
1.15	Needs Report Discussion				
5:00	Adjourn Day 2				
5:30	0 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				

<u>Wednesday, April 19, 2022 (All times are EDT)</u> Morning Plenary Session in Main Ballroom (1st floor)

Welcome President's Welcome Spencer Mickum, PhD, President, CIRMS	(10 min)
Award Presentations Presentation of Awards for Junior Investigator Competition	(5 min)
Presentation of Caswell Award	(5 min)
Plenary Session 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)
Discussion of Linear Non-Threshold Needs John Cardarelli, PhD – President, Health Physics Society	(30 min)
Morning Coffee Break	(20 min)
Plenary Session Discussion of Needed Technologies for Fusion Power Plant Samuel Wurzel, MS – Technology to Market Advisor Advanced Research Projects Agency–Energy (ARPA-E)	(30 min)
<i>Communication on Nuclear Topics and Challenges to Public Perception</i> Shelly Lesher, PhD – Professor, Host of the Podcast "My Nuclear Life" University of Wisconsin – La Crosse	(30 min)
Closing Remarks President's Closing & Needs Report Spencer Mickum, PhD, President, CIRMS	(5 min)
Adjourn Day 3 Lunch on your own	
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	(180 min)
 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 	
	Presentation Publy, President, CIRMS Award Presentations Presentation of Awards for Junior Investigator Competition Presentation of Caswell Award Plenary Session International lonizing 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) Discussion of Linear Non-Threshold Needs John Cardarelli, PhD – President, Health Physics Society Morning Coffee Break Plenary Session Discussion of Needed Technology to Market Advisor Advanced Research Projects Agency–Energy (ARPA-E) Communication on Nuclear Topics and Challenges to Public Perception Shelly Lesher, PhD – Professor, Host of the Podcast "My Nuclear Life" University of Wisconsin – La Crosse Closing Remarks President's Closing & Needs Report Spencer Mickum, PhD, President, CIRMS Adjourn Day 3 Lunch on your own 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