Reported by (Name):	Wesley Culberson
Organization:	University of Wisconsin - Madison
Position Title:	Assistant Professor and UWADCL Director
Activity:	Council on Ionizing Radiation Measurements and Standards (CIRMS) Annual meeting
Meeting Dates:	April 8-10, 2019
Meeting Location:	NIST, Gaithersburg MD
Payment \$:	Travel expense reimbursement
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, 2019. The outstanding issues include radiobiology standards for radiobiological experiments, small field dosimetry, and particle therapy accelerator calibration and 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. The agenda of the meeting I just attended is attached to this report.
Issues for AAPM:	CIRMS will be working to create a Needs Report in the following year to present the needs for standardized dosimetry particularly in areas of radiation biology and targeted radionuclide therapy that affects radiation therapy research. There are also needs for more accurate radiation dosimetry in MRI environments, and updates to the clinical dose reporting methods for particle therapies such as RBE and LET.
Budget Request (\$):	Total reimbursement request for the 2019 annual meeting = $$1,495$

MEDICAL APPLICATIONS MONDAY APRIL 8, 2019 (AFTERNOON)

1:45 PM – 3:15 PM LECTURE ROOM A

<u>Session Title</u>: Measurement Needs for Validating Dosimetry Methods for Epidemiological Studies of Health Risks

Following Radiotherapy <u>Session Chair</u>: Dr. Matthew Mille, National Cancer Institute, National Institutes of Health

Dr. Jeremy Polf, University of Maryland Calibrating CT scanners for Patient Dose Calculations in Proton Beam Radiotherapy

Dr. Matthew Mille, National Cancer Institute, National Institutes of Health Out-of-Field Dose Reconstruction for Studies of Health Risks Following Photon Radiotherapy When DICOM-RT Files Are Available

Dr. David Borrego, National Cancer Institute, National Institutes of Health Out-of-Field Dose Reconstruction for Studies of Health Risks Following Photon Radiotherapy When DICOM-RT Files Are Not Available

Dr. Choonsik Lee, National Cancer Institute, National Institutes of Health Overview of the National Cancer Institute's Radiation Epidemiology Branch and Key Challenges Faced when Reconstructing Patient Dose for Epidemiological Applications

Dr. Yeon Soo Yeom, National Cancer Institute, National Institutes of Health *Out-of-field Dose Reconstruction for Proton Therapy and Measurement of Secondary Neutron Dose*

3:15 PM – 3:45 PM Coffee Break

3:45 PM – 5:15 PM RED AUDITORIUM

Joint Sessions: Medical Applications, Radiation Protection & Industrial Applications Session Title: Chemistry and Biology of the DNA Damage and its Modification Session Chair: Dr. Amitava Adhikary, Department of Chemistry, Oakland University

Dr. Michael Dingfelder, East Carolina University *Track Structure: Simulating the Physics and Chemistry Basis of Radiation Damage*

Dr. David Becker, Oakland University A Radiation Chemistry Track Structure Model in 3D for Ion-beam Irradiated DNA

Dr. Shubhankar Suman, Georgetown University Role of Persistent DNA Damage Response in Heavy-Ion Space Radiation-Induced Carcinogenesis

Dr. Sudipta Seal, University of Central Florida Understanding the Rare Earth Nanomaterials in Mitigation Radiation in Biological Environment

Dr. Jeffrey Buchsbaum, Radiation Research Program, National Institute of Health **DNA Damage and High LET Radiation and the Clinic – Biologic Dosimetry is the Goal**

MEDICAL APPLICATIONS TUESDAY APRIL 9, 2019 (AFTERNOON)

1:45 PM – 3:15 PM LECTURE ROOM A

<u>Session Title</u>: Targeted Radionuclide Therapies (TRT) <u>Session Chair</u>: Dr. Jacek Capala, National Cancer Institute, National Institutes of Health

Dr. Robert Hobbs, Johns Hopkins University *Radiation Dosimetry as a Biomarker*

Dr. Sara St. James, University of California San Francisco Radiation Dose: External Beam Radiation Therapy Conventions and the Evolving Field of Radiopharmaceutical Therapy

Dr. Yuni Dewaraja, University of Michigan Patient Specific Dosimetry: To What Extent Can It be Simplified to Move from Research to The Clinic

Dr. Bryan Bednarz, University of Wisconsin Implications of Heterogenous Dose Distributions for Radiopharmaceutical Therapy Revisited

Dr. Richard Wahl, Washington University Patient-Specific Dosimetry: A Nuclear Medicine Physician Perspective

3:15 PM – 3:45 PM Coffee Break

3:45 PM – 5:15 PM LECTURE ROOM A

<u>Session Title</u>: Radionuclide Therapy and Standards <u>Session Chair</u>: Dr. Wesley Culberson, University of Wisconsin

Elisa Napoli, Oncoinvent Radium Isotopes as a Weapon Against Cancer

Dr. John Keightley, National Physical Laboratory, United Kingdom. Recent Progress in Primary Activity Standards and Nuclear Data for Targeted Alpha Therapy

Dr. Brian Zimmerman, National Institute of Standards and Technology Radioactivity Standards for Image-based, Patient-specific Nuclear Medicine Treatment Planning