

2024 MIDWEST

# RADIATION ONCOLOGY

SYMPOSIUM

## Unlocking Innovations in Cancer Care – AI in Radiation Oncology

Friday, Aug. 23

7:00 a.m.	Registration / Continental Breakfast
7:45 a.m.	Department Chair Welcome and Introductory Remarks Charles A. Enke, MD, FASTRO, FACR
8:00 a.m.	<b>KEYNOTE PRESENTATION:</b> Advances in AI-Based Prediction Models for Radiation Oncology Clifton David Fuller, MD, PhD

### SESSION 1: GENITOURINARY CANCER I

Moderator: Michael Baine, MD, PhD

9:00 a.m.	Assessing Cancer Treatment Efficacy: The Past, the Present, and the Future! Harshraj Leuva, MBBS
9:20 a.m.	Radiomics: The Intersection of Artificial Intelligence and Prostate Cancer Risk Stratification Linda M. Huynh, PhD, MSc
9:40 a.m.	Q&A
9:55 a.m.	Break

### SESSION 2: GENITOURINARY CANCER II

Moderator: Charles A. Enke, MD, FASTRO, FACR

10:10 a.m.	The Use of Nuclear Imaging in the Workup and Management of a Renal Mass Jared P. Schober, MD
10:30 a.m.	Prostate Cancer Treatment and PSMA PET Imaging: Patterns of Care at June E. Nylen Cancer Center Lisa Chaiken, MD
10:50 a.m.	Q&A

### SESSION 3: SARCOMA

Moderator: Andrew Wahl, MD

11:05 a.m.	Current and Novel Radiotherapy Approaches to Soft Tissue Sarcoma Andrew Wahl, MD
11:25 a.m.	Surgical Approaches to the Management of Soft Tissue Sarcomas Sean McGarry, MD
11:45 a.m.	Q&A
12:00 p.m.	Lunch

## SYMPOSIUM FACULTY

### Symposium Director

**Chi Lin, MD, PhD**

Professor and Vice Chair of Research, Department of Radiation Oncology, UNMC

### Keynote Speakers

**Clifton David Fuller, MD, PhD**

Professor, Department of Radiation Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX

**Xiaofeng Yang, PhD, DABR**

Paul W. Doetsch Associate Professor; Vice Chair for Medical Physics Research, Department of Radiation Oncology, Emory University School of Medicine, Atlanta, GA

### Guest Speakers

**Hana Baroudi, MS**

Graduate Research Assistant, The University of Texas MD Anderson Cancer Center, Houston, TX

**Serdar Charyyev, PhD**

Clinical Assistant Professor, Radiation Oncology - Radiation Physics, Stanford University, Stanford, CA

**Yabo Fu, PhD**

Assistant Attending Physicist, Memorial Sloan Kettering Cancer Center, New York, NY

**Hao Gao, PhD**

Associate Professor, Director of Physics Research, Department of Radiation Oncology, University of Kansas, Kansas City, KS

**Megan Hyun, PhD, DABR**

Associate Attending Physicist and Residency Director, Memorial Sloan Kettering Cancer Center, New York, NY

**Sara Abou Naej, MS**

Medical Physics Resident, American University of Beirut Medical Center, Beirut, Lebanon

**Jeffrey Ryckman, MD**

Assistant Professor, Department of Radiation Oncology, West Virginia University Medicine Camden Clark Medical Center, Parkersburg, WV

**Xiandong Zhao, PhD**

Assistant Professor of Radiation Oncology, Washington University School of Medicine in St. Louis, St. Louis, MO

**Dandan Zheng, PhD, DABR**

Professor; Director of Medical Physics, Department of Radiation Oncology, University of Rochester, Rochester, NY

## SESSION 4: BRAIN TUMOR

Moderator: Chi (Kevin) Zhang, MD, PhD

1:00 p.m.	Applications of Artificial Intelligence in Brain Tumor Diagnosis Jie Chen, MD, PhD
1:20 p.m.	Repurposing FDA-Approved Drugs for Glioma Therapy Nicole Shonka, MD
1:40 p.m.	Accurate Prediction of Individual Brain Function Maps From Structural Imaging Utilizing Deep Learning Michele Aizenberg, MD, FAANS, FACS
2:00 p.m.	Radiomic-Assisted Imaging Diagnosis of Brain Metastasis: How to Exceed Human Eye Limitations Chi (Kevin) Zhang, MD, PhD
2:20 p.m.	Q&A
2:50 p.m.	Break

## SESSION 5: HEPATOCELLULAR CARCINOMA

Moderator: Chi Lin, MD, PhD

3:05 p.m.	Targeting the Core: Yttrium-90 Radioembolization in Hepatocellular Carcinoma Management Joseph McBride, MD
3:25 p.m.	Stereotactic Body Radiation Therapy (SBRT) for Hepatocellular Carcinoma Chi Lin, MD, PhD
3:45 p.m.	Optimizing Treatment Strategies: Immunotherapy in Combination with Local Therapy for Hepatocellular Carcinoma Mridula Krishnan, MBBS
4:05 p.m.	Q&A
4:20 p.m.	Adjourn for the Day

## Saturday, Aug. 24

7:00 a.m.	Registration / Continental Breakfast
7:45 a.m.	Introduction by the Director of Medical Physics Sumin Zhou, PhD
8:00 a.m.	<b>KEYNOTE PRESENTATION:</b> Leveraging AI in Precision Radiotherapy: Advancements in Medical Image Analysis Xiaofeng Yang, PhD, DABR

## SESSION 6: AI IN RADIOTHERAPY APPLICATION I

Moderator: Kyuhak Oh, PhD

9:00 a.m.	AI-Powered Precision: Real-Time Markerless Tracking in X-Ray Imaging Yabo Fu, PhD
9:20 a.m.	Use of AI to Improve Access to Radiotherapy in Low and Middle-Income Countries (LMICs) Hana Baroudi, MS
9:40 a.m.	Q&A
9:55 a.m.	Break

## Symposium Faculty — UNMC

### Omar K. M. Abughanimeh, MBBS

Assistant Professor, Division of Oncology and Hematology, Department of Internal Medicine

### Michele Aizenberg, MD, FAANS, FACS

Professor, Department of Neurosurgery, UNMC; Director, Brain and Spine Cancer Center, Nebraska Medicine

### Michael Baine, MD, PhD

Assistant Professor, Department of Radiation Oncology

### David Berkheim, MD

Assistant Professor, Division of Cardiothoracic Surgery, Department of Surgery

### Lisa Chaiken, MD

Assistant Professor, Department of Radiation Oncology

### Jie Chen, MD, PhD

Assistant Professor, Department of Pathology, Microbiology and Immunology

### Charles A. Enke, MD, FASTRO, FACR

Chairman and Professor, Department of Radiation Oncology

### Kyle J. Gallagher, PhD, DABR

Assistant Professor; Medical Physics Residency Program Director, Department of Radiation Oncology

### Linda M. Huynh, PhD, MSc

Graduate Research Assistant, Department of Radiation Oncology

### Qateeb Khan, MD

Assistant Professor, Department of Radiation Oncology

### Mridula Krishnan, MBBS

Assistant Professor, Division of Oncology and Hematology, Department of Internal Medicine

### Harshraj Leuva, MBBS

Assistant Professor, Division of Oncology and Hematology

### Ruirui Liu, PhD, CHP

Medical Physicist; Assistant Professor, Department of Radiation Oncology

### Joseph McBride, MD

Associate Professor; Chief, Division of Interventional Radiology, Department of Radiology

### Sean McGarry, MD

James R. Neff Musculoskeletal Oncology Chair; Associate Professor, Department of Orthopaedic Surgery and Rehabilitation

### Kyuhak Oh, PhD

Medical Physics Resident, Department of Radiation Oncology

### Jared P. Schober, MD

Assistant Professor, Division of Urologic Surgery, Department of Surgery

### Diane Schott, PhD, DABR

Assistant Professor and Education Outreach Program Director, Department of Radiation Oncology

## SESSION 7: FLASH RADIOTHERAPY

Moderator: Kyle J. Gallagher, PhD, DABR

10:10 a.m.	Normal Tissue Sparing via Proton FLASH, Spatially Fractionated Radiation Therapy (SFRT) and Beyond Hao Gao, PhD
10:30 a.m.	G4NDA-Based Radiochemical Monte Carlo Model to Investigate DNA Damage and FLASH Mechanism Xiandong Zhao, PhD
10:50 a.m.	Q&A

## SESSION 8: INNOVATION IN MEDICAL PHYSICS EDUCATION

Moderator: Diane Schott, PhD

11:05 a.m.	An International Exchange: Bi-Directional Global Health Rotation for Residency Training Programs in a High-Income Country and a Low- and Middle-Income Country Sara Abou Naej, MS
11:25 a.m.	Innovative Patient Communication Training Using eLearning and Simulation Megan Hyun, PhD, DABR
11:45 a.m.	Q&A
12:00 p.m.	Lunch

## SESSION 9: NON-SMALL CELL LUNG CANCER

Moderator: Weining (Ken) Zhen, MD, FACR, FASTRO

1:00 p.m.	Debunking Myths: Is More Resection Always Better in Stage I Lung Cancer? David Berkheim, MD
1:20 p.m.	SBRT in Centrally-Located Stage I Lung Cancer: Navigating Treatment Challenges Qateeb Khan, MD
1:40 p.m.	Expanding Treatment Horizons: The Role of Immunotherapy in Stage I Lung Cancer Omar K. M. Abughanimeh, MBBS
2:00 p.m.	Explainable Artificial Intelligence to Identify Dosimetric Predictors of Toxicity in Patients with Locally Advanced Non-Small Cell Lung Cancer: A Secondary Analysis of RTOG 0617 Jeffrey Ryckman, MD
2:20 p.m.	Q&A
2:50 p.m.	Break

## SESSION 10: AI IN RADIOTHERAPY APPLICATION II

Moderator: Shuo Wang, PhD

3:05 p.m.	Adaptive Radiotherapy and the Role of Artificial Intelligence Dandan Zheng, PhD, DABR
3:25 p.m.	Towards Developing an AI-Powered Digital Twin Modeling Framework for Personalized Radiotherapy Ruirui Liu, PhD, CHP
3:45 p.m.	Advancements of Artificial Intelligence in Proton Therapy Serdar Charyyev, PhD
4:05 p.m.	Q&A
4:25 p.m.	Closing Comments by the Department Vice Chair of Research Chi Lin, MD, PhD
4:30 p.m.	Adjourn

## Nicole Shonka, MD

Professor, Division of Oncology and Hematology, Department of Internal Medicine; Clinic and Infusion Medical Director, Fred & Pamela Buffett Cancer Center

## Andrew Wahl, MD

Associate Professor; Medical Residency Program Director, Department of Radiation Oncology

## Shuo Wang, PhD

Associate Professor, Department of Radiation Oncology

## Chi (Kevin) Zhang, MD, PhD

Associate Professor, Department of Radiation Oncology

## Weining (Ken) Zhen, MD, FACR, FASTRO

Professor and Medical Director, Department of Radiation Oncology

## Sumin Zhou, PhD

Professor and Director of Medical Physics, Department of Radiation Oncology

## Symposium Planning Committee

Michael Baine, MD, PhD

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