

Department of Medical  
Physics

About Us

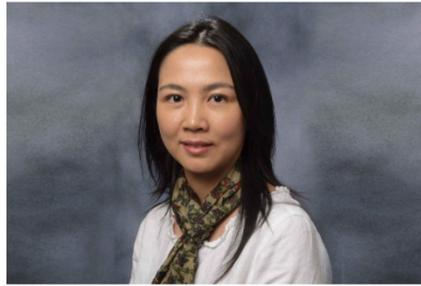
Our Faculty

Recent Publications

## Maria F. Chan, PhD

Attending Physicist

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I am the Chief Physicist at our regional site in Basking Ridge, New Jersey. I am responsible for all radiation physics activities at this site, including quality assurance, radiation calibration, treatment planning, development of treatment protocols, implementation of advanced treatment techniques, and clinical physics consultations.

My current research interest is in dosimetry for advanced delivery techniques. I have published more than 80 peer-reviewed articles and book chapters, and am the lead author for a large number of these. I have served in numerous task groups, work groups, and committees in both the American Association of Physicists in Medicine (AAPM) and American Society for Radiation Oncology (ASTRO) including Chair of the Subcommittee of Practice Guidelines of AAPM and member of the Guidelines Subcommittee of ASTRO.

I received a PhD in Medical Physics from the Medical College of Ohio in 1995 and was certified by the American Board of Medical Physics and the American Board of Radiology. I joined the faculty of Memorial Sloan Kettering in 1999.

### **AI-based Radiotherapy QA (SAM)**

Learning objectives:

1. Learn different types of machine learning applied to radiotherapy QA.
2. Understand how machine learning can be utilized in machine and patient-specific quality assurance.
3. Learn how AI-based QA software is being commissioned and implemented in the clinic.

## Daniel Johnson, PhD, DABR

### Radiation Physicist

Radiation Oncology

Doctor of Philosophy, Radiological Science, University of Oklahoma Health Sciences Center, Oklahoma City, OK

Masters of Science, Radiological Science, University of Oklahoma Health Sciences Center, Oklahoma City, OK

Graduate Student, PhD Candidate, Physics and Astronomy, University of Nebraska, Lincoln, NE

Bachelor of Science, Physics, Western Illinois University, Macomb, IL



### Contact

**Daniel Johnson, PhD, DABR**  
*Radiation Physicist*

Dr. Johnson completed his Doctor of Philosophy in Radiological Science at the University of Oklahoma. Prior to joining the University of Kansas Cancer Center, Dr. Johnson served as an Assistant Professor within the Department of Radiation Oncology and Stephenson Cancer Center at the University of Oklahoma Health Sciences Center.

Dr. Johnson is board certified in Therapeutic Radiologic Physics by the American Board of Radiology and is a member of the American Association of Physicist in Medicine. His research interests include electron beam therapy, accelerated partial-breast irradiation, additive manufacturing and quality assurance optimization and automation.

### **Automation and Artificial Intelligence in Medical Physics: A cursory Review (SAM)**

#### Learning objectives:

- Participants should be able to recognize AI in vendor products.
- Gain an appreciation for the rapid adoption of AI within our industry.
- Become aware of the tools available for bringing AI into the clinic.
- Distinguish between Deep and Machine learning within our field.
- Identify the relationship between AI and automation within our field.



## Baozhou Sun, PhD

Assistant Professor of Radiation Oncology

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### Additional Titles

- Chief of Quality Assurance Medical Physics Services

### Education

- BS, Engineering: Jilin University, Changchun, Jilin, China (2000)
- MS, Applied Science: College of William and Mary, Williamsburg, VA (2002)
- PhD, Applied Science: College of William and Mary, Williamsburg, VA (2005)
- Medical Physics Residency: Washington University School of Medicine, St. Louis, MO (2013)

### Board Certifications

- Certified by the American Board of Radiology in Therapeutic Radiological Physics (2015)

### Biography

Baozhou Sun, PhD, is an assistant professor of radiation oncology. He earned a doctorate in applied science from the College of William and Mary in 2005. Dr. Sun joined the faculty in 2014 after completing his CAMPEP accredited residency at Washington University School of Medicine. He is certified in Therapeutic Radiological Physics by the American Board of Radiology. His research interests include proton therapy, quality assurance, intensity modulated radiation therapy and medical informatics.

### **Practical implementation of EPID-based QA for LINAC (SAM)**

#### Learning Objectives:

- Review relevant characteristics of modern EPIDs for machine QA.
- Learn what QA tests can be performed using EPIDs.
- Understand advantages and limitations of EPIDs for machine QA.
- Learn how to implement EPID-based QA for LINAC.

## Faculty

Medical Physicists

Radiation Oncologists

Adjunct Faculty

Research Faculty

# Popple, Richard, Ph.D.

Faculty Medical Physicists Research Faculty



Professor and Assistant Vice Chair for Medical Physics  
Director, Medical Physics Division  
Head of Treatment Design and Delivery

Areas of Interest:  
Medical physics

### Physical address

Hazlrig Saltor Radiation Oncology Center  
1700 6th Avenue South  
Birmingham, AL 35233

### Administrative Contact

Sunny Scott  
205.975.7828  
[sscott@uabmc.edu](mailto:sscott@uabmc.edu)

## Research Interests

"My research interests are centered on intensity modulated radiation therapy, treatment plan optimization, novel treatment planning techniques, and the clinical implementation of new technologies. My clinical interests are focused on treatment process development and improvement of treatment efficiency."

### **Automation In Planning and Delivery of Stereotactic Radiosurgery (SAMS)**

Learning objectives:

- Describe commercial automated planning systems for VMAT SRS.
- Compare automated planning with manual planning for VMAT SRS.
- Define VMAT SRS plan quality metrics.
- Describe automated treatment delivery for VMAT SRS.



# Jessica R.L. Leif, MS

Department of Radiation Physics, Division of Radiation Oncology - Clinical

## Present Title & Affiliation

### Primary Appointment

Senior Medical Physicist, Department of Radiation Physics, Division of Radiation Oncology, The University of Texas M. D. Anderson Cancer Center, Houston, TX

## Education & Training

### Degree-Granting Education

1997 East Carolina University, Greenville, NC, USA, MS, Physics  
1995 Union College, Schenectady, NY, USA, BS, Physics

## Board Certifications

2003 American Board of Radiology, Therapeutic Radiological



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## Related Links

CARE CENTERS AND CLINICS



## Data-driven control on multi-institutional clinical trials (SAM)

Learning Objective:

At the conclusion of this talk, participants will better understand how Knowledge Based Planning (KBP) is being utilized as a QA tool in multi-institutional trials.

# Department of Radiation Oncology



## Matthew Schmidt, MSc

Clinical Physicist

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### Education

- BS, Physics: Valdosta State University, Valdosta, GA (2011)
- MSc, Medical Physics, Duke University, Durham, NC (2013)

### Biography

Matthew Schmidt joined the Department of Radiation Oncology in 2018. He received a bachelor's degree in physics from Valdosta State University, followed by a master's degree in Medical Physics from Duke University. His clinical interests include computational methods to improve radiation oncology workflow, efficiency and accuracy and image analysis.

A Gateway to Automation: Linear Accelerator Quality Assurance Automation (MPCEC) will discuss how multiple APIs can be used to assist in the automation of periodic linear accelerator QA. In this discussion, we will cover the following topics.

- Exploring vendor provided application programming interface (API) Automation Features.
- Workflow for the generation and analysis of linear accelerator quality assurance (QA) within the oncology information system (OIS).
- Utilizing open-source libraries to assist in the analysis of QA electronic portal imaging device (EPID) images.

# Department of Radiation Oncology



## Francisco Reynoso, PhD

Assistant Professor of Radiation Oncology

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✉ [freynoso@wustl.edu](mailto:freynoso@wustl.edu)

## Additional Titles

- Chief of Treatment Planning Medical Physics Services

## Education

- BS, Physics: Florida International University, Miami, FL (2007)
- MS, Physics: Northeastern University, Boston, MA (2009)
- MS, Medical Physics: Georgia Institute of Technology, Atlanta, GA (2011)
- PhD, Medical Physics: Georgia Institute of Technology, Atlanta, GA (2014)
- Residency, Medical Physics: Washington University School of Medicine, St. Louis, MO (2017)

## Clinical Implementation of Automated Treatment Planning Templates using ESAPI (MPCEC)

The objective will be to describe our experience in automating treatment planning of standard sites using the Eclipse API.

## Kenny Guida, DMP, DABR

**Radiation Physicist**

**Director of Treatment Planning Service**

Radiation Oncology

Bachelor of Science in Physics, Minor in United States History, University of Pittsburgh, Pittsburgh, Pennsylvania

Professional Doctorate of Medical Physics, Vanderbilt University, Nashville, Tennessee



### Contact

**Kenny Guida, DMP, DABR**

*Radiation Physicist*

*Director of Treatment Planning Service*

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NW Mock Ave, Suite 100, Blue  
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### Curriculum Vitae

Dr. Kenny Guida graduated from Vanderbilt University in 2012 with a Professional Doctorate of Medical Physics. In 2008, he received his Bachelor of Science degree in Physics, with a minor in United States History, from the University of Pittsburgh. Since July 2012, Dr. Guida has served as a Clinical Medical Physicist at The University of Kansas Cancer Center Community Cancer Programs and participates in the CAMPEP-Accredited Therapy Medical Physics Residency Program as an Assistant Director.

Dr. Guida is board certified in Therapeutic Radiological Physics by the American Board of Radiology, and he is a member of the American Association of Physicists in Medicine (AAPM). His research interests include VMAT treatment planning and delivery and brachytherapy.



## **Knowledge-Based Planning: Applying Lessons of the Past to Improve Radiotherapy Treatments (SAM)**

Learning objectives:

- What is Knowledge-Based Planning (KBP)?
- How do some vendors employ KBP in treatment planning?
- What types of treatments can KBP be used for clinically?
- What are geometric and Dosimetric outliers?
- How does one go about creating a KBP model?
- How does KBP compare to manual planning?