



Leo Ding  
President



# Great Lakes Chapter

## American Association of Physicists in Medicine

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## 2020 Young Investigators Symposium

Thursday, May 28<sup>th</sup> 2020, 5:00 – 9:00 PM

*First ever GLC AAPM virtual meeting*

We invite all GLC members and friends to join us for the annual Young Investigators Symposium to encourage and promote promising student research.



2019 GLC AAPM Young Investigators Symposium

Registration for all attendees will be FREE

**[REGISTER HERE](#)**

*Thanks to our sponsors for helping us continue to provide GLC events!*

### Gold Sponsors



### Silver Sponsors



# 2020 Young Investigators Symposium

Thursday, May 28<sup>th</sup> 2020, 5:00 – 9:00 PM

5:00 pm	Welcoming remarks	<b>Ning (Winston) Wen, Ph.D.</b> GLC-AAPM President-Elect
5:10 pm	Recent developments and trends in diagnostic x-ray imaging and AAPM's role in advancing medicine of the future	<b>James T. Dobbins III, Ph.D., FAAPM</b> AAPM President-Elect
6:00 pm	Q & A with Dr. Dobbins	<b>Moderator: Ning (Winston) Wen, Ph.D.</b>
6:15 pm	Coffee break	
6:20 pm	Young Investigators Symposium talks (I)	<b>Moderator: Ning (Winston) Wen, Ph.D.</b>
6:20 pm	Ionized Radiation Acoustic Imaging (IRAI) for in-vivo FLASH dosimetry	<b>Noora Ba Sunbul</b>
6:28 pm	A deep learning cardiac substructure pipeline for MR-guided cardiac applications	<b>Eric Morris</b>
6:36 pm	A multi-phase cross-modality deformable bio-tissue phantom for deformable image registration validation	<b>An Qin</b>
6:44 pm	Predicting contrast enhancement in transcatheter aortic valve replacement CT using machine learning	<b>Erin Macdonald</b>
6:52 pm	The development of an accurate model of spot-scanning treatment delivery time for a compact superconducting synchrocyclotron proton system	<b>Lewei Zhao</b>
7:00 pm	Questions for YIS presenters (I)	<b>Moderator: Ning (Winston) Wen, Ph.D.</b>
7:10 pm	Gold Sponsor Presentations	<b>Jim Ernsberger - Sun Nuclear</b> <b>Christine Smith - IBA</b>
7:20 pm	Young Investigators Symposium talks (II)	<b>Moderator: Leo Ding, Ph.D.</b>
7:20 pm	Creation of an automated hand-crafted radiomics methodology and assessment of its potential to contribute to a prospective trial	<b>Eric Carver</b>

7:28 pm	Multi-temporal resolution model-based volumetric prediction of breathing and slow drifting motion in the abdomen using radial MRI	<b>Lianli Liu</b>
7:36 pm	Evaluation of an IMRT optimization method that directly incorporates patient-specific toxicity tradeoffs in NSCLC	<b>Dan Polan</b>
7:44 pm	A multimodality approach using deep attention convolutional neural networks for intrahepatic recurrence localization of liver cancer post-SBRT	<b>Lise Wei</b>
7:52 pm	The effect of image reconstruction on the quantification of transient ischemic dilation in rest-stress Tc-99m myocardial SPECT studies	<b>Joseph Steiner</b>
8:00 pm	Questions for YIS presenters (II)	<b>Moderator: Leo Ding, Ph.D.</b>
8:10 pm	Closing remarks	<b>Leo Ding, Ph.D.</b> GLC-AAPM President

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# Our **virtual booth** is now open.

Take a Tour 

Quick Videos  
Timely Webinars  
Helpful Resources

Since we're unable to meet at the usual conferences & chapter meetings, we invite you to learn what's new from Sun Nuclear — at your convenience.

From faster QA workflows and remote accessibility to flexible support, we have some important advances we're eager to share. In the meantime, we just want to say: **thank you.**



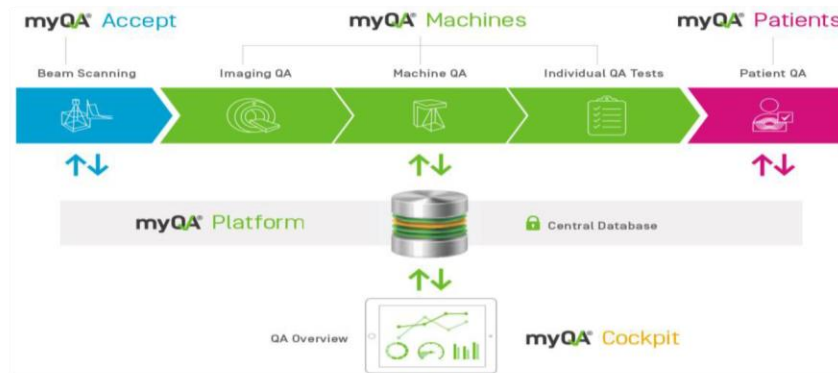
# IBA DOSIMETRY SOLUTIONS



Sphinx Compact



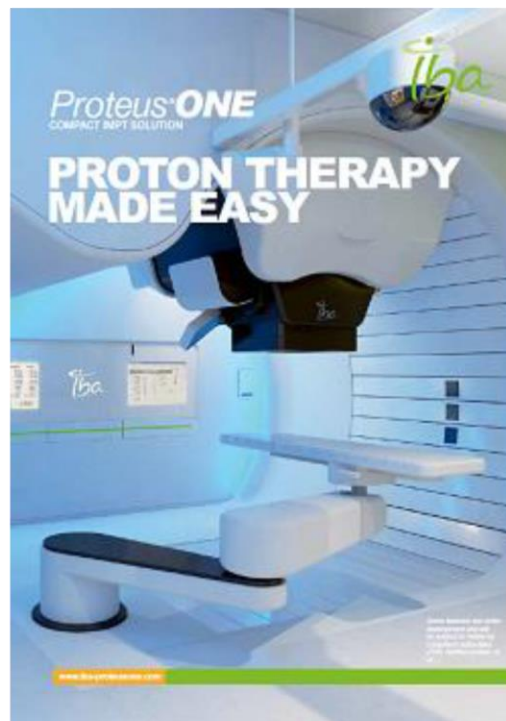
SMARTSCAN



myQA Platform



# IBA PROTON THERAPY SOLUTIONS



**Thank You**

To all of the healthcare professionals  
who are on the front lines during these challenging times.

**Varian salutes you!**

Working towards **a world without fear of cancer.**

**varian**



RayStation

# TREATMENT PLANNING THE WAY IT SHOULD BE

RayStation has been designed with your needs and workflow clearly in mind. The intuitive interface makes it a joy to use, however complex the workflow. With ultrafast computation speed and groundbreaking features such as multi-criteria optimization and 4D adaptive radiation therapy, RayStation will revolutionize your planning process.

## AUTOMATED PLANNING

- Templates and protocols
- Scripting
- Automatic breast planning
- Fallback planning
- Machine learning\*
- Plan Explorer

## THE PHYSICIAN TOOLBOX

- Manual and semi-automatic contouring
- Deep-learning organ segmentation
- Plan evaluation
- Robust evaluation
- Radiobiological evaluation
- Virtual simulation

## CARBON-ION PLANNING

- Carbon-ion PBS optimization
- Robustness tools
- Multi-field and single-field optimization
- Plan directly deliverable on synchronrons
- Combination planning with other modalities

## PROTON PLANNING

- PBS, DS, US, LS, Wobbling
- Monte Carlo dose computation/optimization
- Robust optimization and evaluation
- PBS optimization with apertures/MLC
- Multi-criteria optimization, including robustness
- Fully integrated adaptive planning
- Simulated organ motion
- Automatic creation of backup proton plans

## BORON NEUTRON CAPTURE THERAPY

- Support for defining BNCT-specific RBE models
- BNCT treatment plans creation

## CHEMO PLANNING

- Prescription of medical oncology treatments
  - Track changes to patient's regimen
  - Get alerts when exceeding dose limits
- Management of medical oncology regimen templates
- Registration and (in)activation of active substances
- Printing of standardized reports and administration overviews

## SPEED AND ACCURACY

- GPU-powered computation
- Monte Carlo dose calculation
- Collapsed Cone dose calculation

## ADVANCED OPTIMIZATION TOOLS

- Multi-criteria optimization
- Robust optimization
- Co-optimization of multiple beam sets
- Radiobiological optimization

## PHOTON AND ELECTRON PLANNING

- 3D-CRT
- IMRT
- VMAT
- TomoTherapy
- Stereotactic planning
- Electrons
- MR-based planning

## ADAPTIVE PLANNING

- Deformable registration
- Dose tracking
- Adaptive replanning