Initial Experience of Per Fraction Software in a Community Setting
A Gonzalez, University Hospitals Case Medical Center, Elyria, OH

- PerFRACTION Software from Sun Nuclear was installed to work in conjunction with an ELEKTA VERSA HD Linac.
- "The PerFRACTION software presents clear advantages when compared to typical devices used for patient specific QA... The software is run in web based environment, meaning it could be assessed from any computer. PerFRACTION also has the potential to be used during the actual treatment to account for patient anatomy changes or Linac malfunction."

A Olch, et al., University of Southern California and Children’s Hospital of Los Angeles, Los Angeles, CA

- "Analysis of EPID images revealed that dosimetric variations were present in a clinically relevant percentage of treatments. The reasons for failure were identifiable approximately half the time. Daily collection of EPID images using an automated system is a practical and effective way of monitoring dose delivery accuracy during radiotherapy and can provide actionable information."

Extensive Analysis of a 3D Second Check System
B Bismack, et al., Henry Ford Health System, Detroit, MI

- SNC Machine is able to detect changes in machine performance below TG-142 action levels.

Patient Specific VMAT QA for SRS with PerFraction
J Haywood, Mercy Health Partners, Allendale, MI

- "The PFF (Perpendicular Field-to-Field) method suggested by TG-218 works well for VMAT SRS plans using the PerFRACTION software. The trajectory log-based 3D patient dose calculations are an added benefit and alleviate the disadvantages of the PFF method indicated by TG-218."

Reducing Mean Heart Dose with OSMS Monitoring and PerFraction Verification
J Haywood, Mercy Health Partners, Allendale, MI

- PerFRACTION used to validate breath-hold for DIBH cases.
- Breath-hold technique resulted in higher gamma passing rates than free breathing technique, indicating breath-hold to more reproducibly position the patient.
- Excellent clinical use case of PerFRACTION in-vivo exit dosimetry that log file-only solutions would not see.

Current Limitations and Emerging Solutions for Quality Assurance (QA) of Single-Isocenter VMAT Treatment of Multiple Brain Metastases (MBM)
P Zygmanski, et al., Brigham & Women’s Hospital, Boston, MA

- HEAR FROM OUR CHIEF SCIENCE OFFICER
Bill Simon joins a panel of industry experts for this event focused on stakeholder collaboration.

Pursuit of Safe and Effective Imaging and Radiation Therapy/Planning Products

Monday, July 30, 4:30 PM
Room 209
DAILY QA // Featuring use of Daily QA™ 3
SU-I-GPD-T-323
When a Good Monitor Chamber Goes Bad: Diagnosing Atmospheric Communication of a Sealed Monitor Chamber
T McCaw, et al., University of Wisconsin, Madison, WI

- Daily output variations measured with two independent systems on a TrueBeam STx were found to highly correlate with atmospheric conditions during a period in which the monitor chamber was suspected to be communicating with the atmosphere. Additional measurements acquired during controlled temperature variation of the monitor chamber confirmed atmospheric communication of an originally sealed chamber.

TRS483 CLINICAL IMPLEMENTATION // Featuring use of EDGE Detector™
MO-I345-GePD-F3-4
Measurement of Output and Percent Depth Dose (PDD) for Small Stereotactic Radiosurgery (SRS) Cones Using Semiconductor and Microdiamond Detectors
E Lief, et al., VA Medical Center, Pelham, NY

- The practical methods described can be used for commissioning an SRS system with small cones. New correction factors significantly improve agreement between different detectors.

MULTI-METS, IMRT & VMAT QA // Featuring use of ArcCHECK®
SU-I-GPD-T-375
Quality Assurance Study of Stereotactic Radiosurgery of Multiple Brain Lesions with a Single Isocenter
J Zhang, et al., Southern California Permanente Medical Group, Los Angeles, California

SU-I-GPD-T-436
Dosimetric Verification for Ultra-Small Intracranial Target Radiation Treatment Using Linac-Based Dynamic Conformal Arc Therapy
Y Zheng, et al., University Hospitals Cleveland Medical Center, Cleveland, OH

SU-I-GPD-T-413
Validation of Single Isocenter Multi-Target SRS Planning Calculations and Early Clinical Experience
C Geraghty, et al., Anne Arundel Medical Center, Annapolis, MD

DIAGNOSTIC QA // Featuring use of Multi-Energy CT Phantom
TH-AB-202-4
Convolutional Neural Network Based Material Decomposition with a Photon-Counting-Detector Computed Tomography System
H Gong, et al., Mayo Clinic Rochester, Rochester, MN

PARTNERS IN SOLUTIONS
Sun Nuclear’s Greg Robinson will present on PlanIQ™ in this session, Intelligent Automation for Treatment Planning Workflows.

PlanIQ – Define, Analyze & Document Treatment Plan Quality
Monday, July 30, 1:50 PM
Exhibit Hall D, Poster Area