Filmless MLC Quality Assurance in Robotic Radiosurgery
Disclosures

- Speaker is the owner and president of Spectrum Medical Physics, LLC, which has contracts or financial interest with:
  - Standard Imaging Inc.
  - Siemens Medical
  - Integrated Medical Technologies

- Speaker received financial reimbursement for travel associated with the presentation presented herein (Standard Imaging Inc.).
QA StereoChecker™

- Filmless CyberKnife® QA System
- High-Resolution Flat-Panel Imager
- 200 micron Resolution
- High Frame Rate
- Portable and Compact
QA StereoChecker™

- Aligned using implanted high-Z markers
- Automated alignment using treatment localization system
- Fast and consistent setup
- No manual manipulation of robot
- No attachment to collimator housing
- Designed to be used by physicists and therapists
The InCise™ MLC

- Available for CyberKnife M6
- 26 leaf pairs
- 0.385 mm wide at 800 mm
- Full over-travel
- Allows for treatment of larger lesions
- 100 mm x 115 mm
- Leaf Position Accuracy ≤0.95 mm

Presented at the 2016 Radiosurgery Society Scientific Meeting
MLC QA – The Garden Fence Test

- Less than 5 minutes
- Replaces visual film-based tests
- Replaces monthly Garden Fence Tests
- Capable of detecting 0.2 mm leaf variations
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Induced Individual leaf errors
- 0.1 mm to 1.0 mm
- Increments of 0.1 mm

“Detection” occurs if a cluster of pixels is simultaneously above a threshold with SNR above 10.

Mean pixel difference values are used as “Warning” and “Error Thresholds” as well as for trend analysis.
Thank You

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Questions?