

RSNA/ACRIN Imaging Researchers Workshop
Session II

**Informatics Tools in Support
of Clinical and Translational Research**

Moderator

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RSNA/ACRIB Imaging Researchers Workshop
ImagingCoreLaboratory Workflow Management

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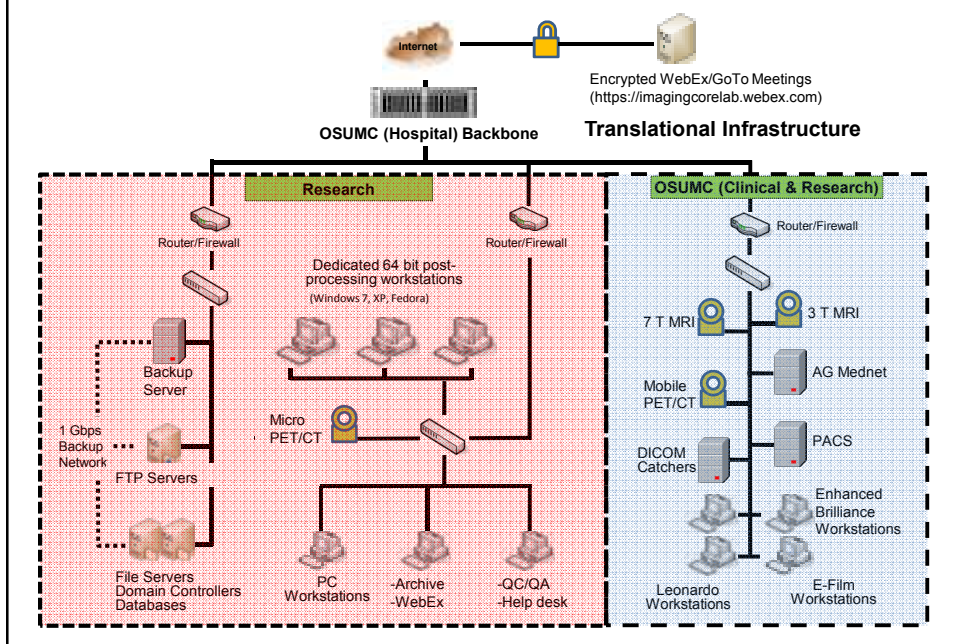
Disclosure

- MVK has no conflicts of interest to disclose
- The WCI ImagingCoreLaboratory has been partly supported by Ohio Third Frontier Grant support including the Ohio Imaging Research and Innovation Network

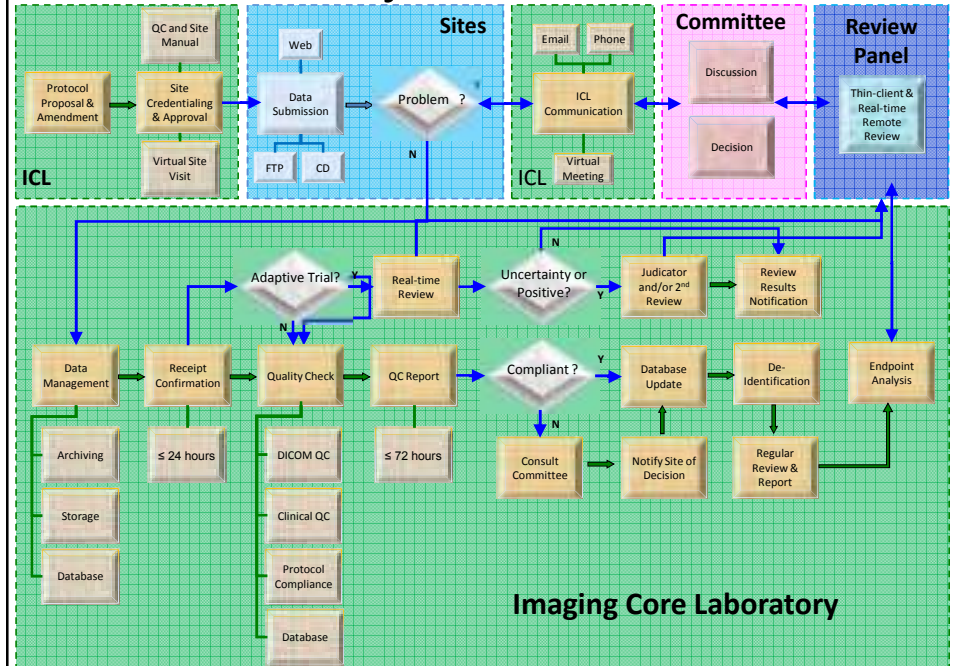
Key Strategies

- Use as much as possible commercial soft- and hardware
- Focus on workflow optimization by customization
- Integrate our research scientists and students into appropriate opportunities
- Co-locate this in the most faculty / clinical partners accessible space

ICL Infrastructure Overview



ICL Quality Control Workflow



ICL Virtual Web Meeting - Site Training, Education, Remote Review and Brainstorming


The screenshot displays the GoToMeeting user interface. On the left, a navigation sidebar lists options: 'Attend a Meeting', 'Host a Meeting', 'Set Up', and 'Support'. The main content area features a 'Thank you' message, a 'My Meetings' section with a table of upcoming meetings, and promotional banners for '24/7 Support', 'Complementary Training', and 'Join the GoToMeeting Community'. The GoToMeeting logo and tagline 'Online Meetings Made Easy™' are visible at the top.

Date	Time	Title	Meeting ID	Start
09/16/2011	12:00 PM	CHLORIDE/ATMOSPHERIC/ISSUES	87002222	Start

Web based Electronic Data Transfer

<http://upload.imagingcorelab.com>

The screenshot shows the OSU Imaging Core Lab web portal. The page features the OSU Medical Center logo and a 'Sign On' section with fields for 'Username' and 'Password', and a 'Sign On' button. A 'Need Help?' link is visible at the bottom.




(00) Imaging Core Lab Quality Check Report

Test Name: 10000
 Subject ID: 0000
 Study Phase: 00 Post-Breast
 Date of Study: 00/00/00

Patient Name: 00000000
 Patient ID: 00000000

Date of Patient Exam: 00/00/00
 Date of Scanner Exam: 00/00/00
 Date of Scanner Exam: 00/00/00
 Date of PET Exam: 00/00/00



Subject ID: 0000
 Patient Exam: PET CT (Complete Case Pet)
 Date of Study: 00/00/00

Patient Name: 00000000
 Patient ID: 00000000

Date of Patient Exam: 00/00/00
 Date of Scanner Exam: 00/00/00
 Date of Scanner Exam: 00/00/00
 Date of PET Exam: 00/00/00

Standardized Imaging Core Lab Quality Check Reporting

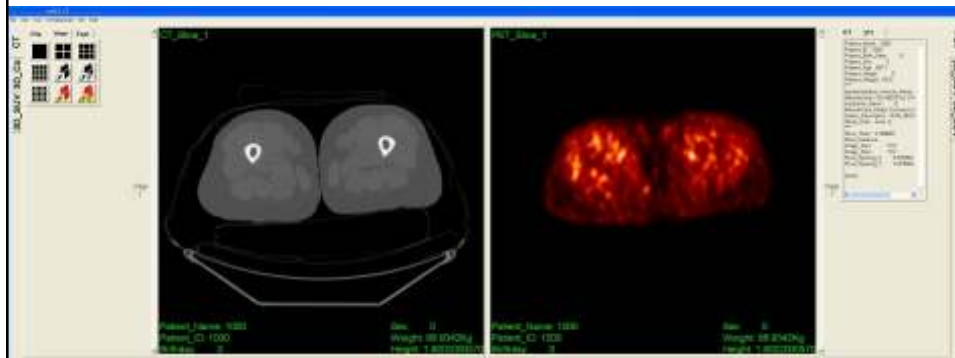
ICL PET/CT Quality Check Weighted Scoring Criteria

Weight Score Criteria of Data Compliance (CALGB50303)									
Category	#	QC Items	Weight (100)	Green	weight	Yellow	weight	Red	weight
Timing	1	Timing Point of PET/CT (BL, C2, C6, ...)	10	within	10	< 7days diff	6	> 7days	4
	2	Emission uptake time	15	50-70 min	15	45-90	8	< 45 or > 90	0
	3	consistency of emission uptake time between Followups and Baseline	15	< 10min diff	15	< 15min diff	8	> 15	0
Data	4	Completeness of imaging Data	3	complete	3	most complete	2	incomplete	0
	5	Data format (DICOM, jpg, bmp, films, ...)	10	DICOM	10	secondary DICOM	3	non-dicom	0
	6	consistency of PET/CT Scanner	15	same	15	n/a	3	different	0
	7	consistency of arm positioning	5	same	5	different	3	n/a	0
	8	consistency of scan direction	5	same	5	different	3	n/a	0
	9	Injection site	3	no extravasation	3	clear extravasation	1	n/a	0
	10	De-identification	2	De-identified	2	not de-identified	1	n/a	0
	11	Image resolution	3	meet protocol	3	1mm diff	1	> 1mm diff	0
Patient	12	CRFs	2	complete	2	incomplete	1	n/a	0
	13	Fasting (e.g., > 4 hours)	2	> 4	2	n/a	1	< 4	0
	14	Glucose level (e.g., < 200 mg/dL)	5	< 200	5	n/a	1	> 200	0
	15	FDG Dosage (e.g., 7-15 mCi)	5	8-20	5	7-22	4	< 7 or > 22	0
total:			100		100		41		8

Study: Compliant: >80 Acceptable: 70-80 Non-Compliant: <70

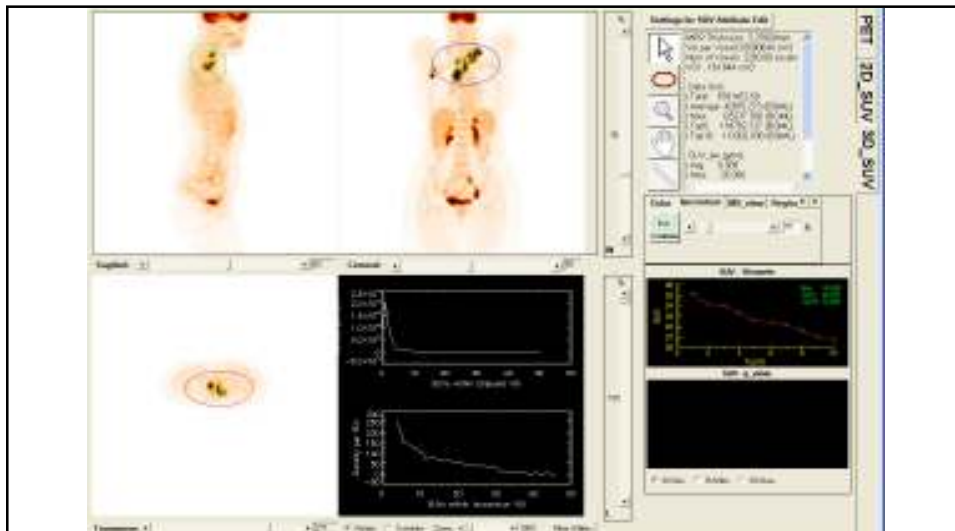
Patient: Compliant: >85 Acceptable: 75-85 Non-Compliant: <75

Medical Imaging Review



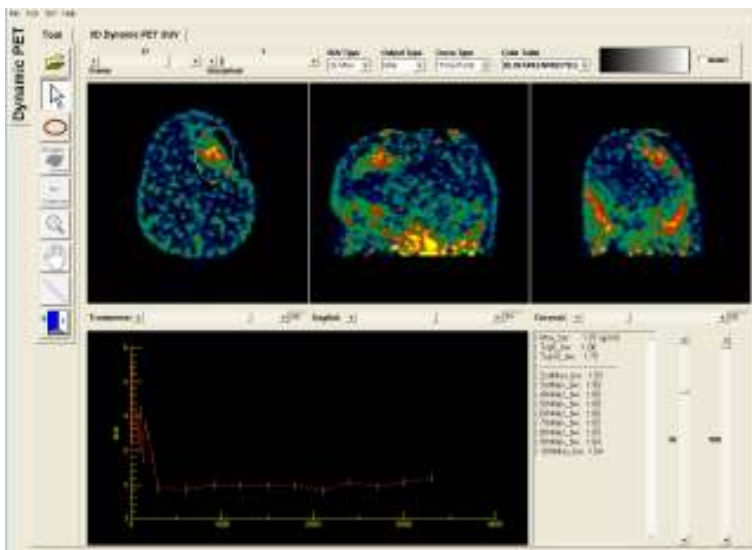
Powerful visualization tools for PET, CT, SPECT and MRI images display and diagnosis:

- 1 x 1, 2 x 2, 3 x 3, 4 x 4, 5 x 5, 6 x 6, 7 x 7, 8 x 8, 9 x 9, 10 x 10 Layout Displays
- Automatic & Manual movie of slices display
- Distance measurement along straight line
- Angle measurement between two lines
- Annotation with text
- Color Look-Up Tables enabled display
- Mouse enabled Window Level/Width (Contrast / Brightness) adjust

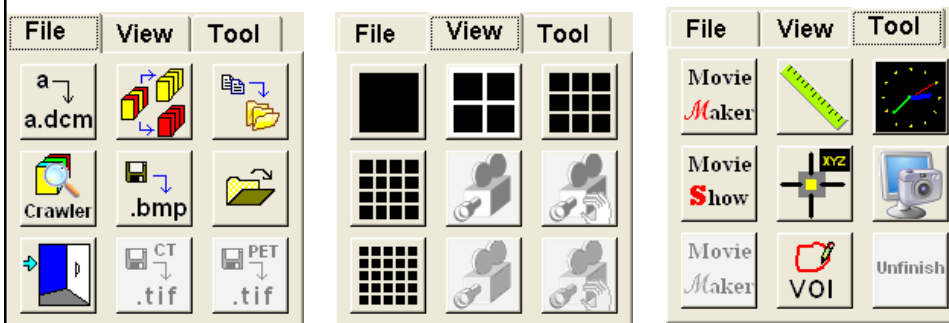


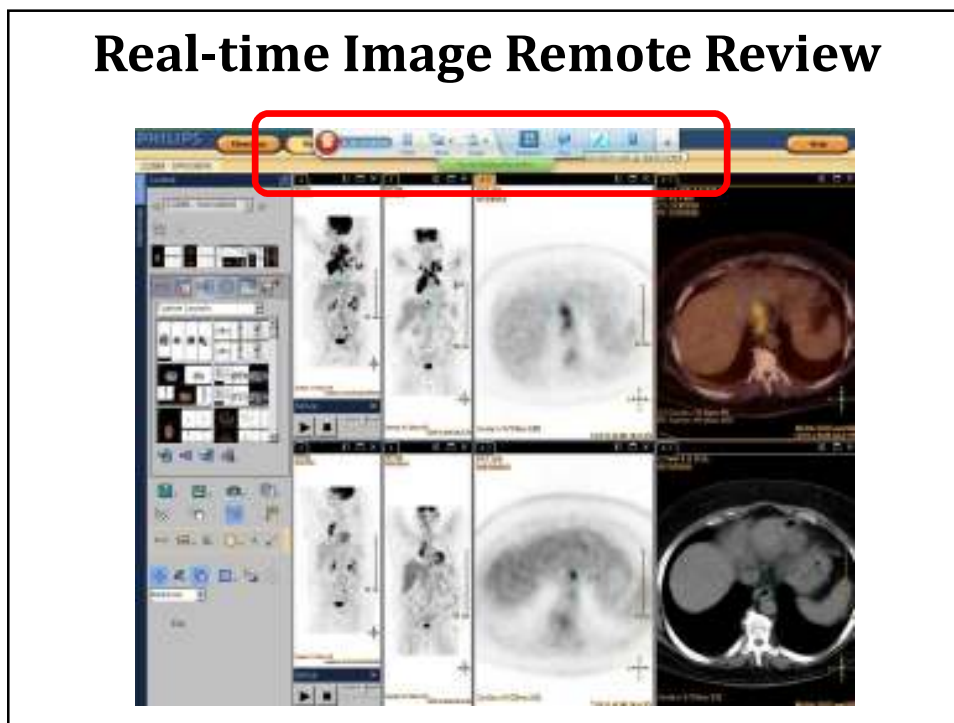
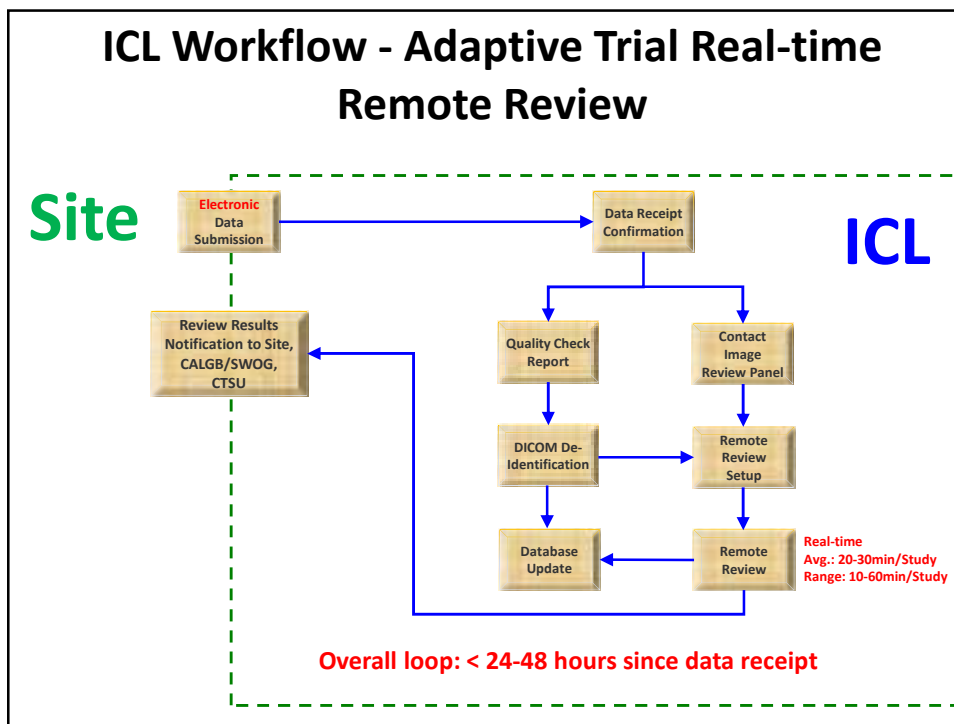
- Multi Planar Reconstruction (Transverse, Sagittal and Coronal)
- 2D/3D VOI tool
- Isocontour VOI
- Bq/mL, SUVbw, SUVlbm, SUVbsa, SUVglu, SUVsub, SUVmax, SUVavg, SUVtop10, SUVtop5, Volume
- Vendor PET based SUV calculations
- Color Look-Up Tables (LUTs)
- 4D fusion

Dynamic PET Analysis

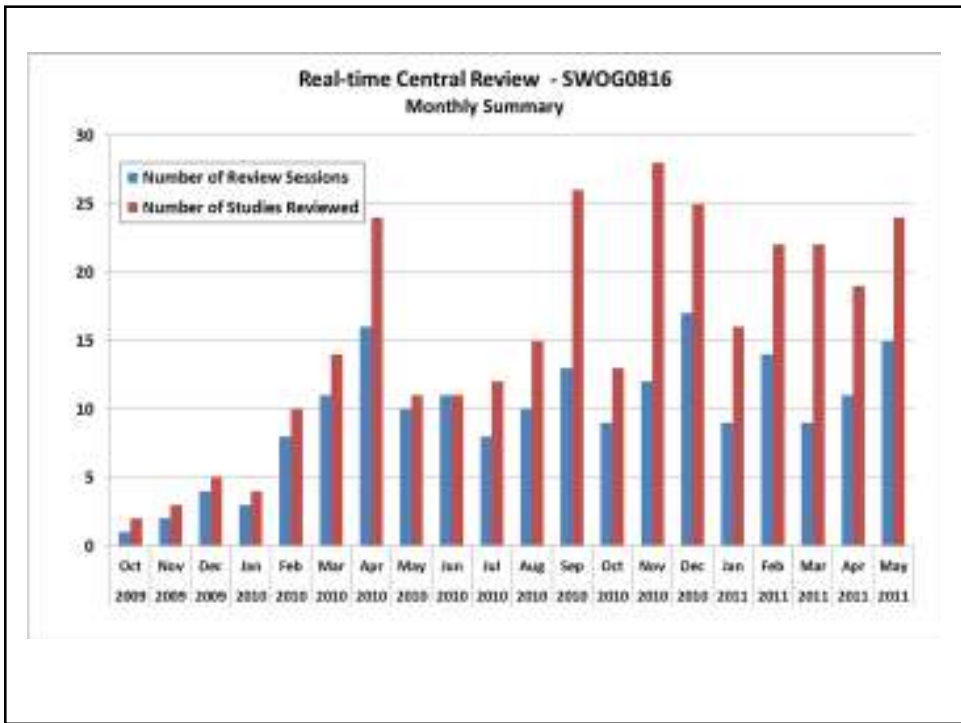
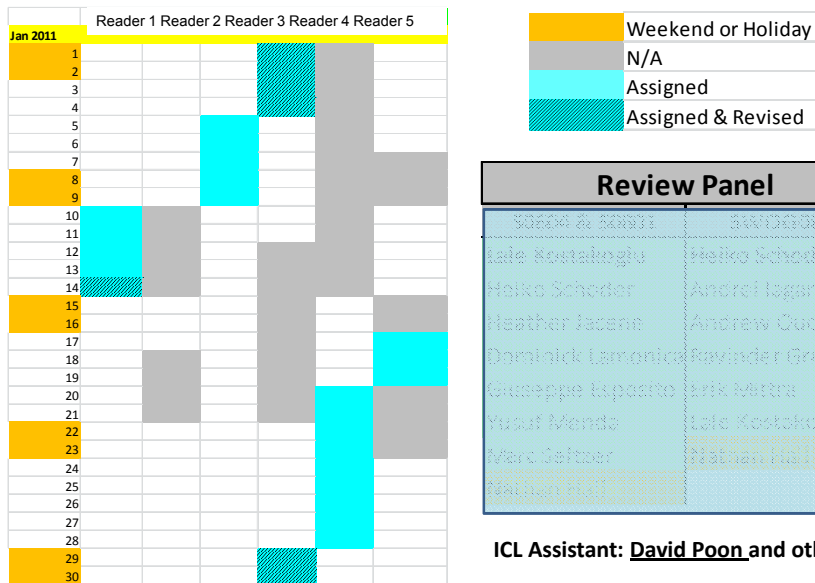


Miscellaneous





Adaptive Trial Central Review – Scheduling & Review Panel



Medical Center Department of Radiology
Division of Imaging Science

Adjunct Faculty
Johannes Heverhagen, MD, PhD
Steffen Sammet, MD, PhD
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