

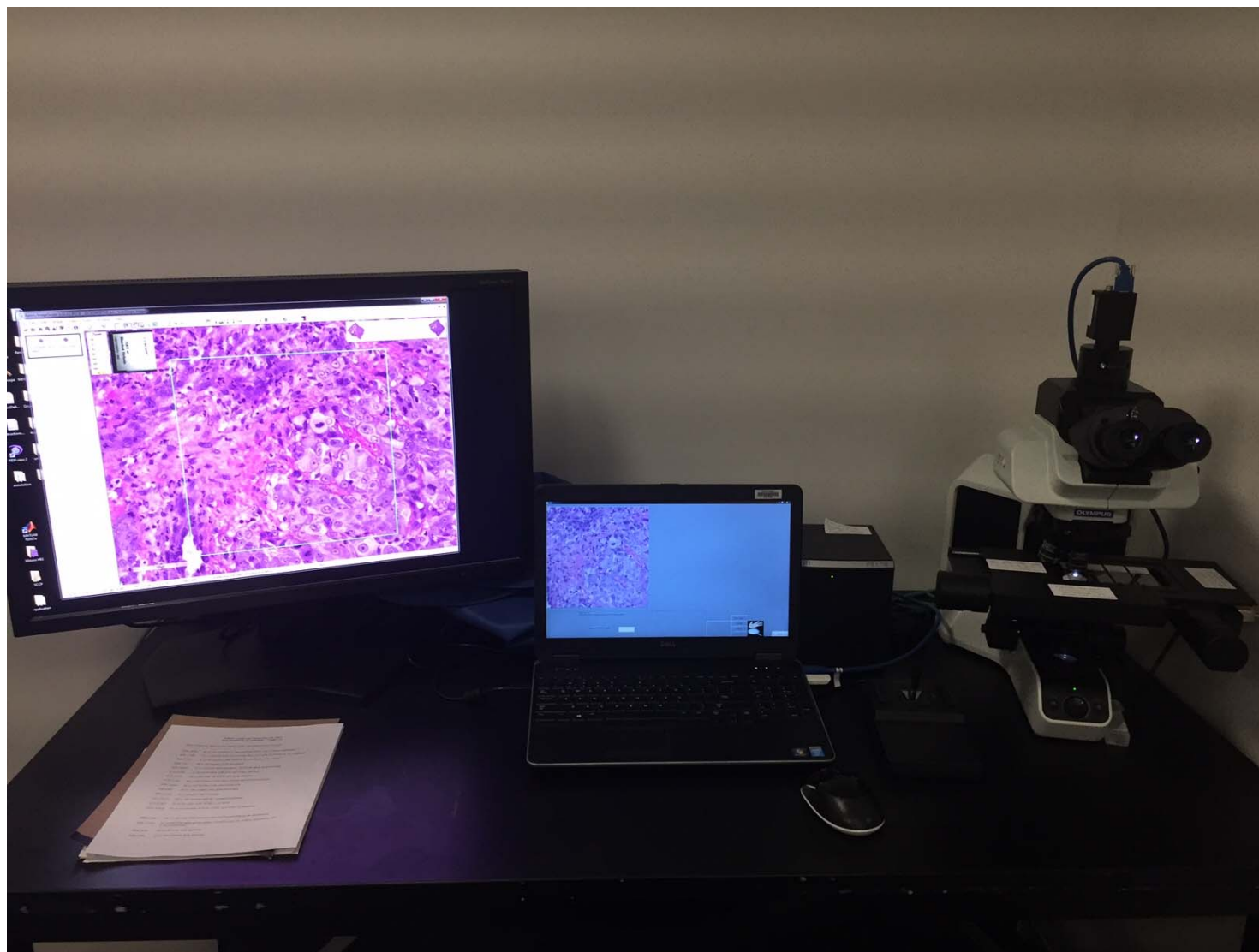


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**eeDAP Project at MSKCC**  
**Feature Studies comparing digital and**  
**microscope viewing modes: a WSI**  
**working group project with FDA group**  
**(Brandon and Qi)**

# Mitosis Project with FDA WSI WG: eeDAP mitosis study

The FDA study system was installed at MSKCC in June.



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in Kettering

# Mitosis Project with FDA WSI WG: eeDAP mitosis study



MSKCC version of the study 1:

- Followed FDA Study
- We have added
  - Keeping mitosis candidates
  - 3 more scanners
    1. Same scanner with FDA
    2. Another type of WSI scanners

We have evaluated

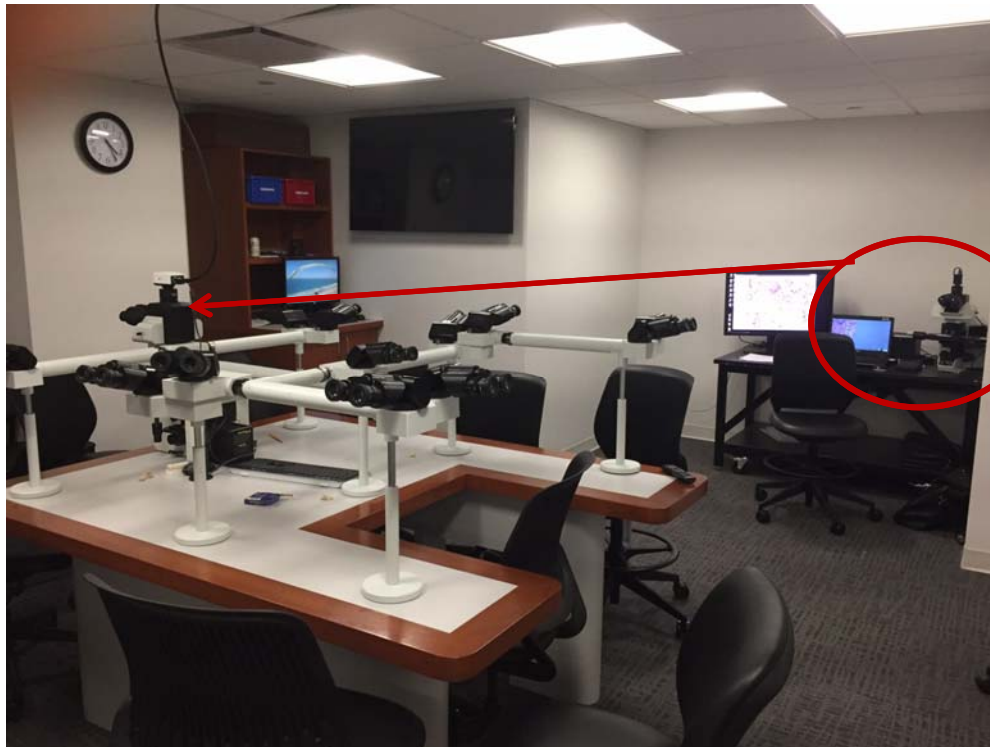
WSI vs microscope

WSI vs WSIs

Per participants



# Mitosis Project with FDA WSI WG: eeDAP mitosis study



MSKCC version of the study1:

- 5 pathologists participated
  - Followed FDA Study
- We have added
- Keeping mitosis candidates
  - 2 more scanners

1. Same scanner with FDA
2. Another type of WSI scanner

We have evaluated

WSI vs microscope

WSI vs WSIs

Per participants

MSKCC version of the study2:

14 heads microscope version of eeDAP

- 13 pathologists+ 1 non pathologist have participated. Leaders of our department partially participated.



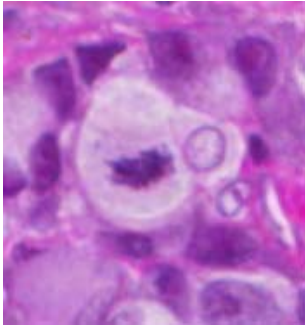
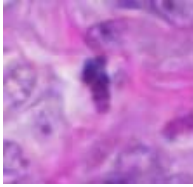

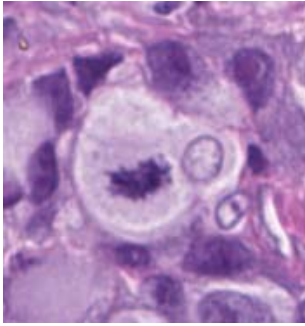
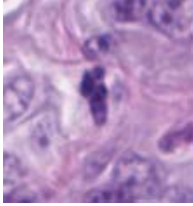

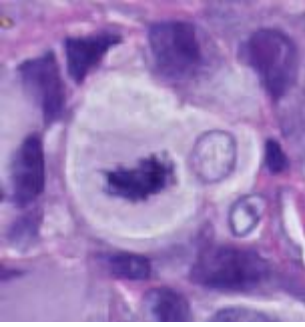
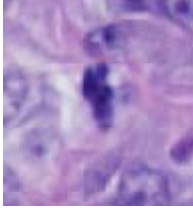

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# Some of our results



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# Comparison of candidates

	<u>mitosis</u>	<u>mitosis</u>	<u>mitosis</u>
<u>FDA A</u>	5/5 	3/5 	1/5 
<u>MSK A</u>	5/5 	0/5 	5/5 
<u>MSK B</u>	3/3 	0/3 	1/3 
<u>14 head microscope</u>	4/4	0/4	3/4

# FDA mitosis project

Observing method	Concordant candidates
FDA A	20
MSK A	22
MSK B	24
14head microscope	28
ALL	12



# FDA mitosis project

Kappa statistics analysis (vs Microscope)

Observer 2	vs FDA A	0.397
	vs MSK A	0.462
Observer 3	vs FDA A	0.545
	vs MSK A	0.6752
Observer 4	vs FDA A	0.549
	vs MSK A	0.687
	vs MSK B	0.578
	vs MSK C	0.549
Observer 5	vs FDA A	0.669
	vs MSK A	0.572
	vs MSK B	0.680
	vs MSK C	0.699





# FDA mitosis project

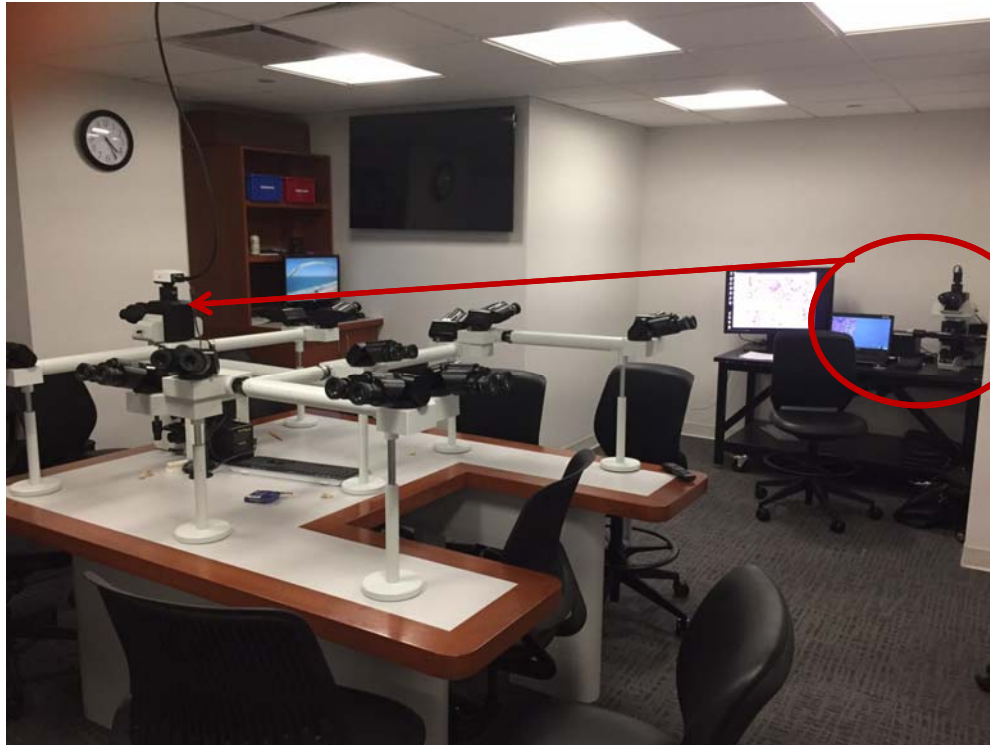
Kappa statistics analysis (on-going)

FDA A (5 observers)	0.457
MSK A (5 observers)	0.560
MSK B (3 observers)	0.637
MSK C (2 observers)	0.742
Microscope (4 observers)	0.551
Observer 1 (3 scanners)	0.574
Observer 2 (2 scanners and microscope)	0.445
Observer 3 (2 scanners and microscope)	0.568
Observer 4 (4 scanners and microscope)	0.628
Observer 5 (4 scanners and microscope)	0.625



# Mitosis Project with FDA WSI WG: eeDAP mitosis study

MSKCC version of the study2: 14 heads microscope version of eeDAP



- Multi-heads microscope is used for teaching in general. It might be not for simultaneous diagnosis by 14 people. Focus was very difficult (everyone is looking at different nuclei within the field)
- It was very interesting experience



# FDA mitosis project

- Next step
  - Completing statistic analysis of the study.
  - Confirming suspicious mitosis candidates with pathologists at Staff meeting
  - If anyone is interested in looking at our WSIs scanned by 3 more scanners, we are happy to share the images



Thank You!



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