

# Introduction Of Digital Pathology

**MariBeth Gagnon MS, CT(ASCP)HTL**  
Cytotechnologist

CLIAC  
August 21, 2013



# Overview

- **Definitions**

- **Speakers**

- Jared Schwartz, MD, PhD - Digital Pathology Applications
  - Chief Medical Officer at Aperio / Leica Biosystems
  - Consulting Professor of Pathology at Stanford University
- Anil Parwani, MD, PhD - CAP Guidance on Whole Slide Imaging
  - Professor of Pathology at University of Pittsburgh Medical Center (Shadyside)
  - Member of the CAP expert panel
- Aldo Badano, PhD. – ICC Color Summit
  - Laboratory Leader for Imaging Physics
  - Center for Devices and Radiologic Health, FDA

## Digital Pathology Association Definitions

- **TELEPATHOLOGY:** Defined by the American Telemedicine Association as electronic, multimedia communication between pathologists for the purpose of primary diagnoses and diagnostic consultation second opinion.
- **DIGITAL PATHOLOGY:** A dynamic, image-based environment that enables the acquisition, management and interpretation of pathology information generated from a digitized glass slide. Often used interchangeably with “Virtual Microscopy.”

## Digital Pathology Association Definitions

- **VIRTUAL MICROSCOPY:** Virtual microscopy enables viewing of microscope slides on a computer screen over a network; Equivalent optical resolution and visual magnification of a microscope is maintained, as well as scanning, zooming (change of magnification), and focus. Often used interchangeably with “Digital Pathology.”
- **WHOLE SLIDE IMAGE (WSI):** A digitized histopathology glass slide that has been created on a slide scanner. The digitized glass slide represents a high-resolution replica of the original glass that can then be manipulated through software to mimic microscope review and diagnosis. Also referred to as a virtual slide.

## Digital Pathology Association Definitions

- **WHOLE SLIDE IMAGING:** The acquisition process of creating a virtual slide or whole slide image on a slide scanner.
- **IMAGE ANALYSIS:** Defined by the College of American Pathologists as computer-assisted detection or quantification of specific features in an image following enhancement and processing of the image, including DNA analysis, morphometric analysis and FISH.

## Questions

- **What HHS guidance is needed for validation of whole slide imaging? Can the CAP guidance serve as a model? Are other sources of guidance available that should be considered?**
- **What practices discussed at the International Color Consortium (ICC) Color Summit should be considered during implementation or validation of whole slide imaging by a laboratory?**



**For more information please contact Centers for Disease Control and Prevention**

MariBeth Gagnon – [mgagnon@cdc.gov](mailto:mgagnon@cdc.gov)

1600 Clifton Road NE, Atlanta, GA 30333

Telephone: 1-800-CDC-INFO (232-4636)

TTY: 1-888-232-6348

Visit: [www.cdc.gov](http://www.cdc.gov) | Contact CDC at: 1-800-CDC-INFO or [www.cdc.gov/info](http://www.cdc.gov/info)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Center for Surveillance, Epidemiology, and Laboratory Services (proposed)

Division of Laboratory Programs, Standards, and Services (proposed)

