



COLLEGE of AMERICAN
PATHOLOGISTS

Practice Management Networking Community

Digital Pathology For Smaller Practices

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- **Vice Chair – Practice Management Committee**
- **Member: Diversity, Equity and Inclusion Committee**
- **Medical Director of Ascension Providence Novi**
- **AP/CP Board Certified with Hematopathology Fellowship**



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- **Member- Surgical Pathology committee**
- **Member – Diversity, equity, and inclusion committee**
- **Senior Pathologist – Ruffolo, Hooper, and Associates**
- **AP/CP Board Certified with Bone and Soft Tissue Fellowship**



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Basic “Ground Rules”

- **Respect for diversity of participants**
- **Respect for privacy of confidential/privileged information**
 - **Do not share sensitive information deemed confidential or that reflect specific competitive strategies, trade secrets, market positions, etc.**

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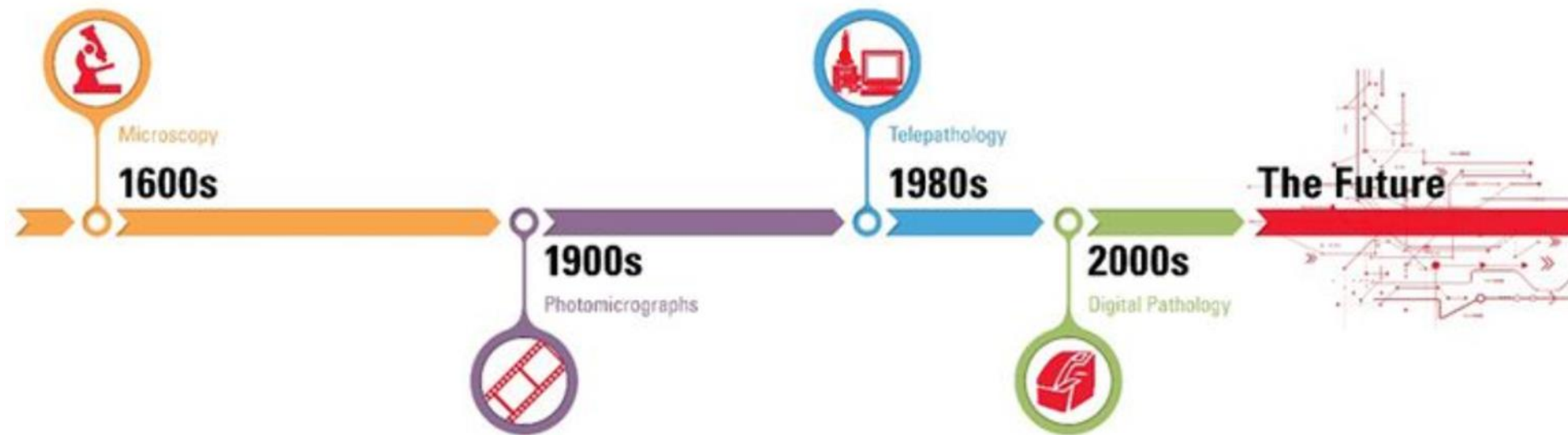
Disclaimer

The contents discussed are not intended to provide, and do not constitute professional, financial, billing, marketing, management, or legal advice. They do not represent the perspectives of the CAP, and do not reflect binding positions of participants.

Today's Open Discussion

- What is Digital Pathology
- What are the Benefits of Digital Pathology
- Digital Pathology in Education
- What is Artificial Intelligence
- Machine vs Deep Learning
- Computational Pathology
- What is the Future of Artificial Intelligence
- What are the Benefits of Artificial Intelligence

What Is Digital Pathology?



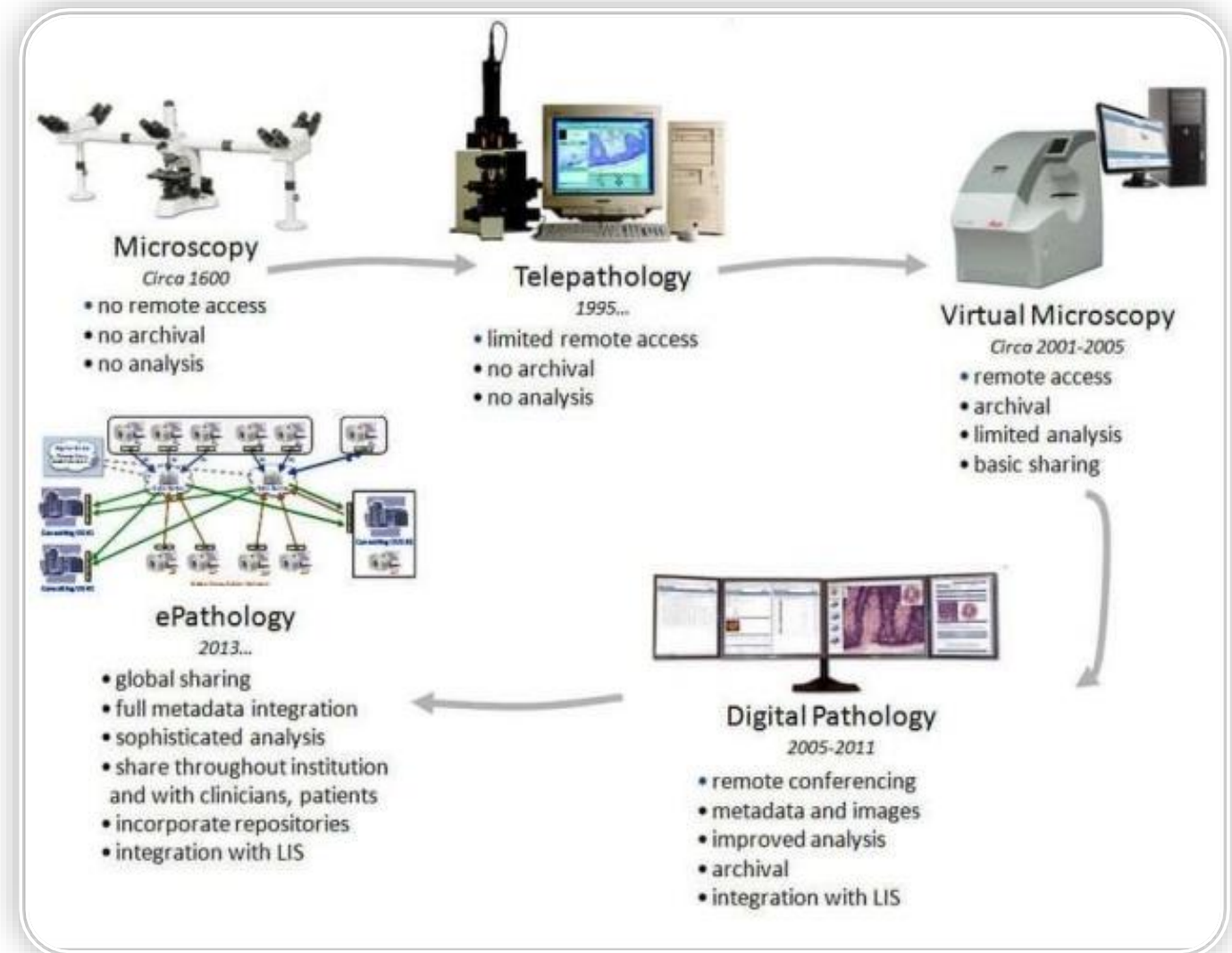
- **Digital Pathology is an image-based information environment enabled by computer technology that allows for the management of information generated by a digital slide (Wikipedia)**
- **Whole Slide Imaging (WSI) – ‘virtual microscope’**
- **Computer aided diagnosis**

POLLS – Your Pre/Post COVID Experience

- Were you using a form of digital pathology pre-COVID?
- Did the pandemic encourage your practice to introduce or add new forms of digital pathology?

Digital Path vs Telepath

- **Static images:** Most economical and usable; Only selected fields obtained
- **Robotic microscopy:** Can change focus, illumination, magnification, fields; Most expensive, performance may suffer from connectivity issues, if doing consult – must coordinate timing
- **Virtual slides:** WSI stored on a computer or server and available at any time via the internet; expensive, needs lots of storage space and good internet capabilities



POLL – Use Cases

- What forms of digital pathology are you using?

Uses of Digital Path

- **Primary diagnosis : In-system, overseas**
 - Requires specific equipment, software, and validation
- **Offsite frozens: Lone hospitals / surgery centers**
 - Less regulation on equipment and software (10% rule)
- **Consult / Second opinion: Single-pathologist labs, expert opinion**
 - Not under the specific equipment / software mandates
- **Education: Myriad – slide ‘boxes’, slide sessions / preview, lectures**
- **Competency assessment: PIPs, etc.**
- **Research: Including analytics**

What Are The Benefits of Digital Pathology?

Digital Path allows the pathologist to engage, evaluate, and collaborate quickly and remotely, thereby improving efficiency, productivity, and quality

- Improved analysis:
 - Objective algorithms
 - Rapidly retrieval prior cases
 - Annotation of slides



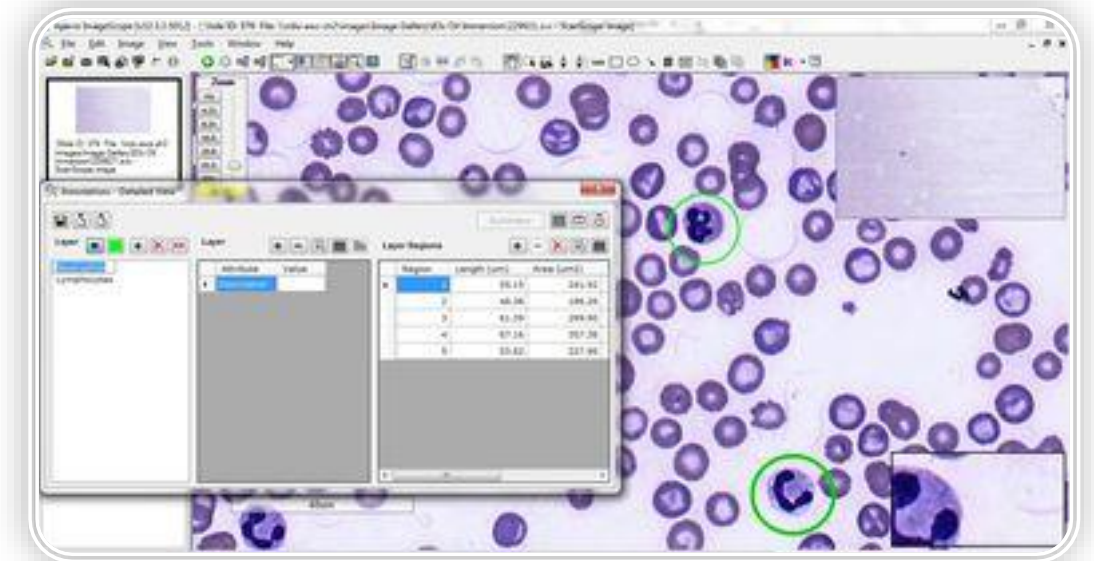
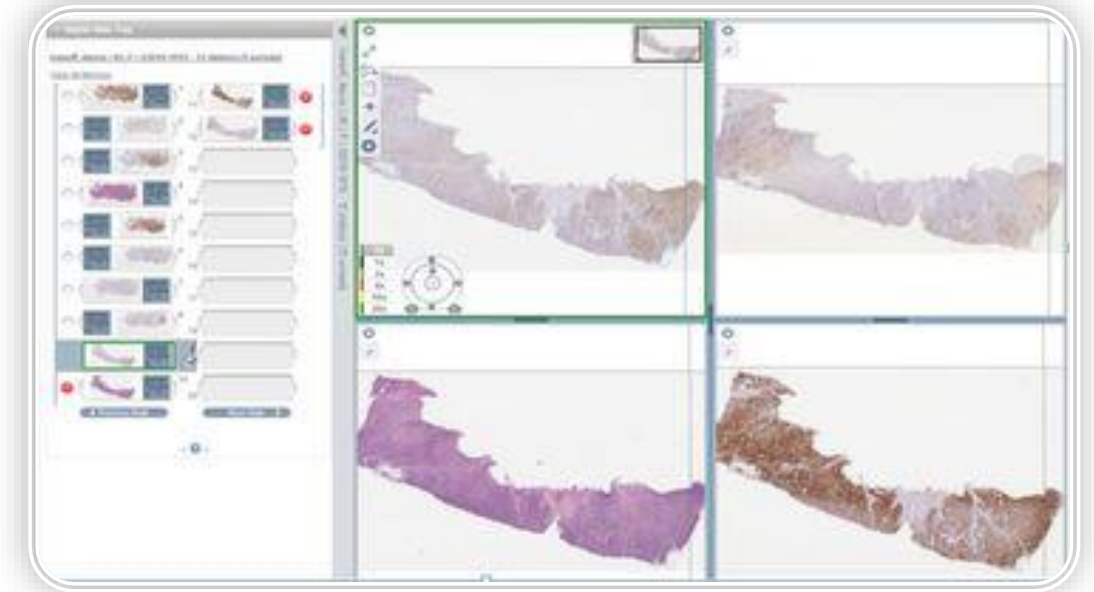
What Are The Benefits of Digital Pathology?

- **Increased productivity:**
 - Workflow
 - Faster TAT
 - Innovation
- **Consults:**
 - Quicker than mailing glass slides (and return!), no concern for loss or breakage



Digital Pathology in Education

- One of the earliest adopters
- Standardization
- Improved accessibility
- Improved learning:
 - Viewing sides simultaneously (i.e., IHC)
- Annotation
- Access before/after sessions
- Store slides

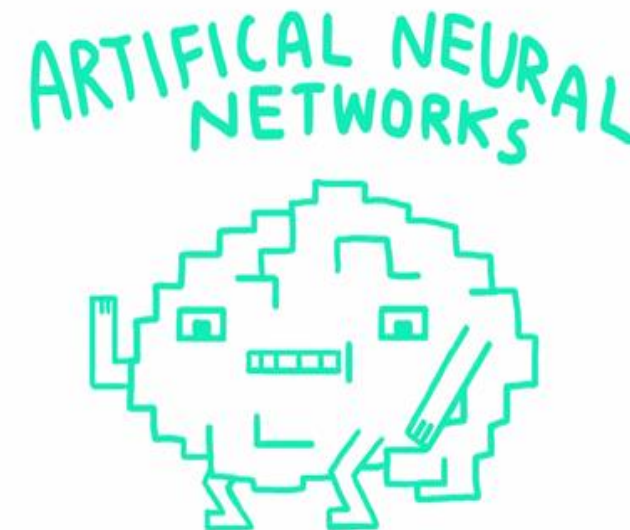


What is Artificial Intelligence

- Production of intelligent-seeming behavior in machines
- Concept dates back to the 1950s
- Strong AI: Capable of solving more complex problems including unexpected issues

Example: Histopathologic diagnosis

- Weak AI: Capable of solving specific tasks
Example: ID a met in a LN
- Hierarchy of AI, Machine Learning, and Deep Learning



POLL – Artificial Intelligence

- Do you currently use a form of AI in your practice?

The Future of AI in Pathology

- **Numerous stakeholders: Pathologists, AI enthusiasts, Data scientists, Informaticists, Vendors**
- **What is the time scale: 1 yr., 10 yrs., 20 yrs., beyond?**
- **Skeptic, Dystopians, Utopians, Pragmatists**
- **Likely truth:**
 - General AI that could replace pathologists is not impossible, but not in the near future**
 - Specific tools will reach the market in 1-5 years, but not be mainstream**
 - It will just be another tool we adopt to do our job (IHC, Molecular)**

Benefits of Implementing AI

- Adjunct to microscopy and traditional tests
- May get diagnostic, prognostic, and predictive information not previously known
- Automate the 'boring', time-consuming, and/or difficult things
- May increase our visibility and importance
- New billable tests?
- Decrease health care costs

POLL - Challenges

- What are the current challenges to implementing digital pathology solutions in your practice?

Challenge of implementing Digital Path

- Need large, well-annotated data sets and space to store
- Creation of complex but generalizable models
- Need to demonstrate value
- Overcome skepticism
- Not enough utilization of WSI (No DP = No AI)
- Lack of training among practicing pathologists



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Next steps

- **Next PMN Open Discussion**
 - September 13, 2022 – 2nd Tuesday of the month
 - Rural Pathology Challenges
 - Registration Link: bit.ly/capsep13
- **Next Roundtable Discussion**
 - October 18, 2022 – 2nd Tuesday of the month
 - Topic: Contract Elements Monitors
 - Registration Link: bit.ly/capoct18
- **Two requests**
 - Please complete survey
 - Consider volunteering to lead a future session and share your experience

Membership

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- CAP Practice Management Resources
 - <https://www.cap.org/member-resources/practice-management>
- CAP Value-Based Business Toolkits
 - <https://www.cap.org/member-resources/practice-management/value-based-business-toolkits>



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