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PathXL Simulator

Dr. James Diamond
PathXL

- Developed by pathologists
- Standardising Training
- Virtual Learning Environment
- Consequence Free Environment
- Multi-modal Environment

Queen's University Belfast

RCPA The Royal College of Pathologists of Australasia

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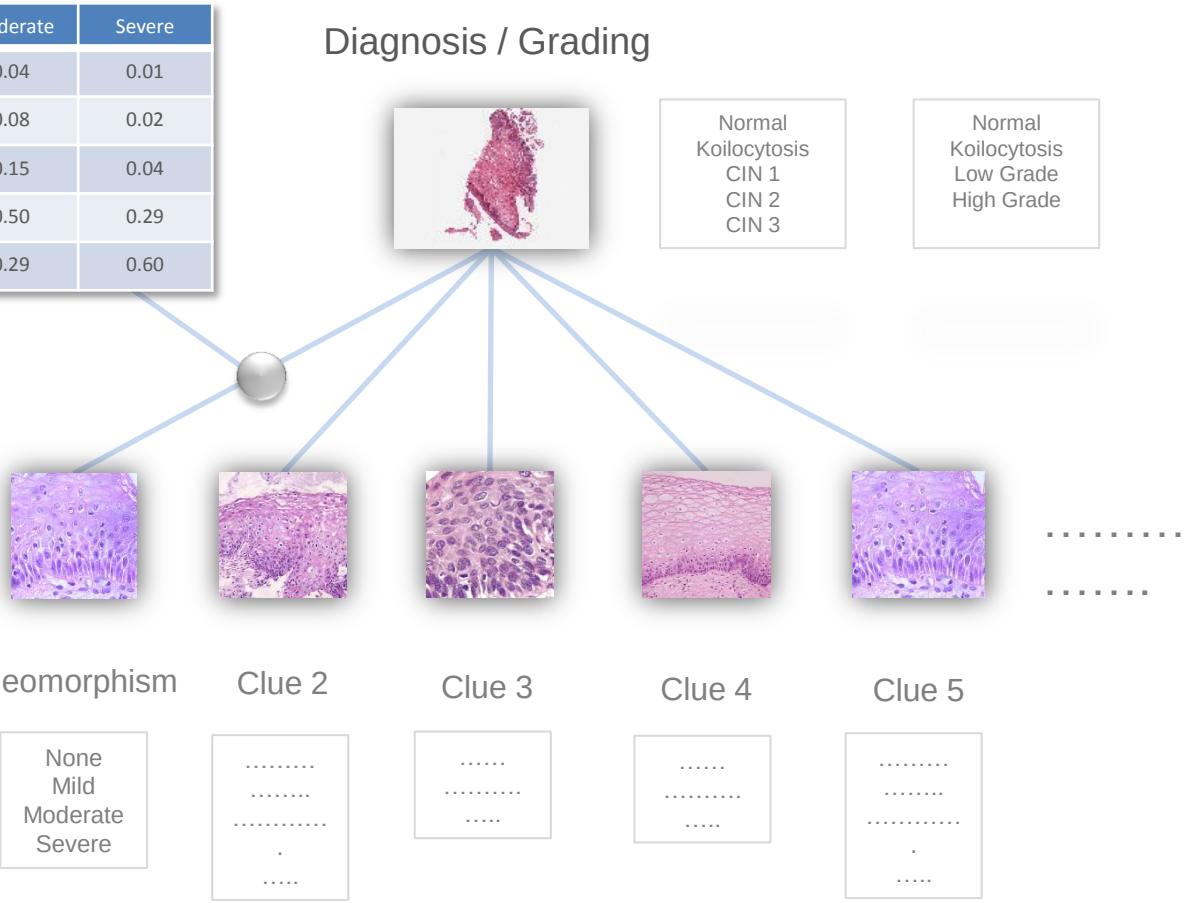
The Royal College of Pathologists Pathology: the science behind the cure

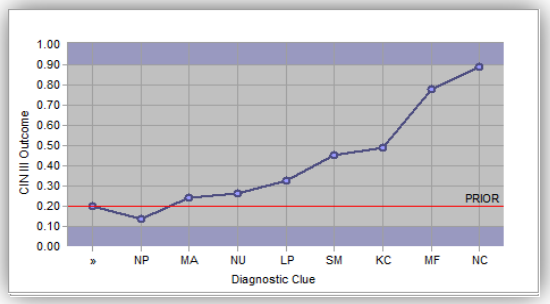
- There is a desire overcome some of the fundamental limitations of one-on-one training.
- It is into this arena that ***diagnostic simulation*** is making an impact with the introduction of PathXL Simulator.
- The role of the simulator in this modality is to mimic the real world diagnostic environment.
- Trainees can explore it, interact and understand it before the techniques can be applied in the real world.
- Consequence Free Learning Environment

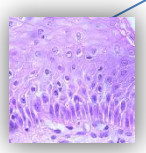
	None	Mild	Moderate	Severe
Normal	0.95	0.05	0.04	0.01
Koilocytosis	0.20	0.70	0.08	0.02
CIN 1	0.01	0.80	0.15	0.04
CIN 2	0.01	0.20	0.50	0.29
CIN 3	0.01	0.10	0.29	0.60



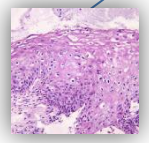
Normal	0.00
Koilocytosis	0.00
CIN 1	0.00
CIN 2	0.11
CIN 3	**0.88**

Diagnosis / Grading

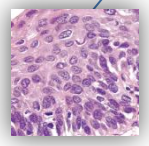




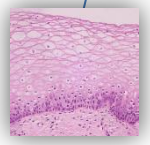
Pleomorphism



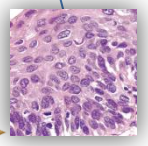
Mitotic Activity



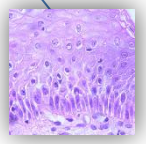
Nucleoli



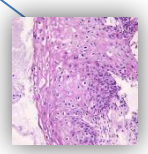
Loss of Polarity



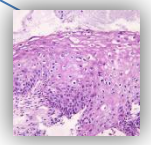
Superficial Maturation



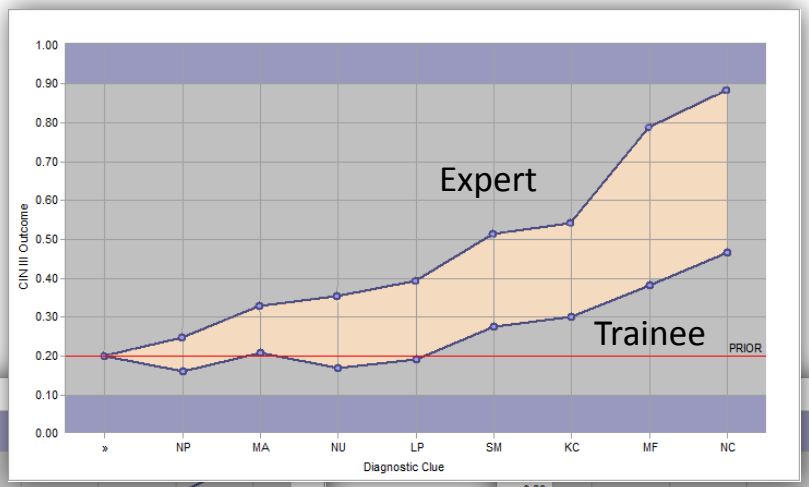
Koilocytosis

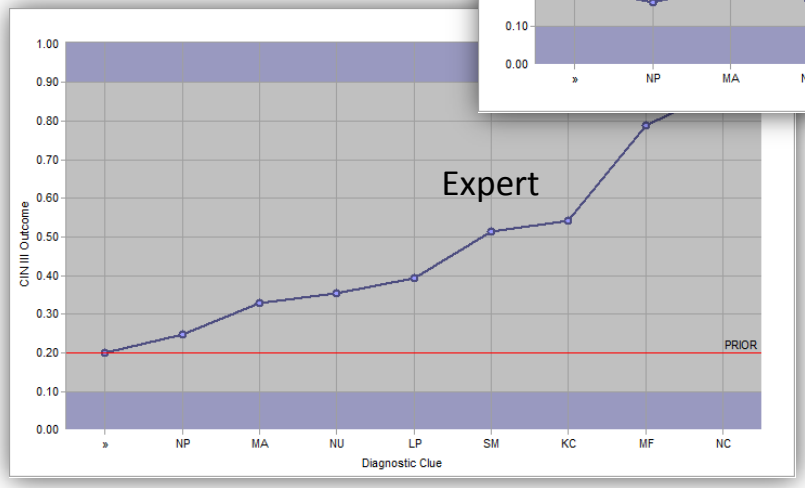


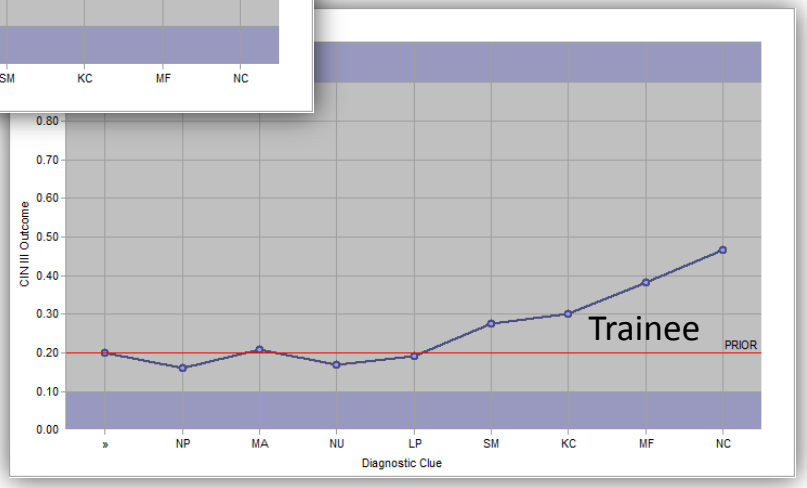
Abnormal Mitotic Figures



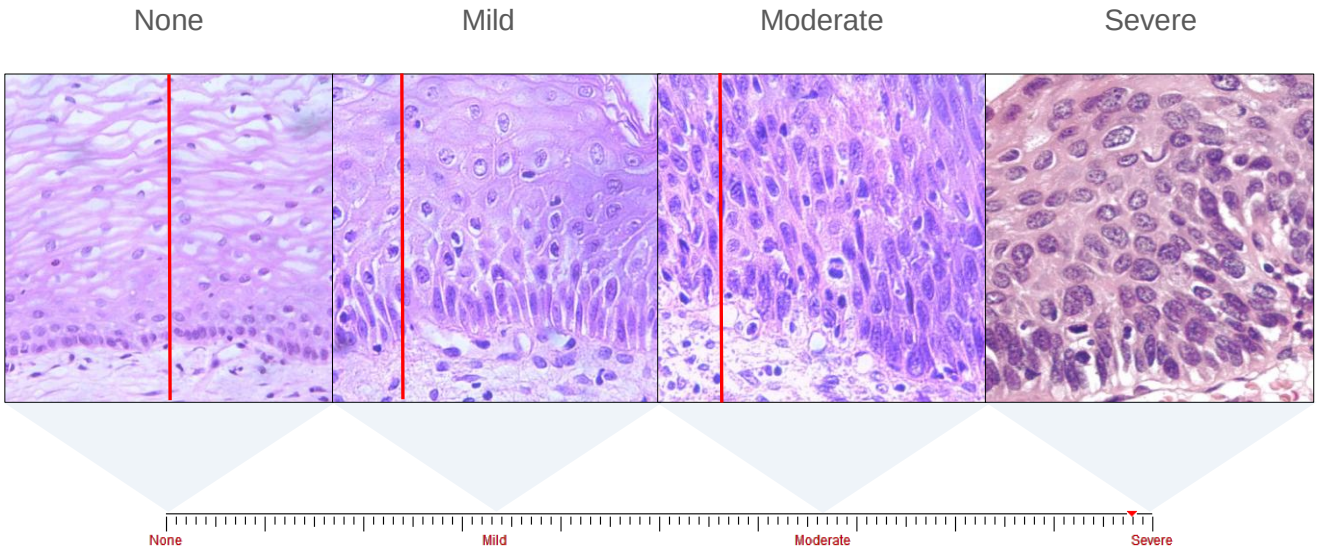
Nuclear Chromatin Pattern

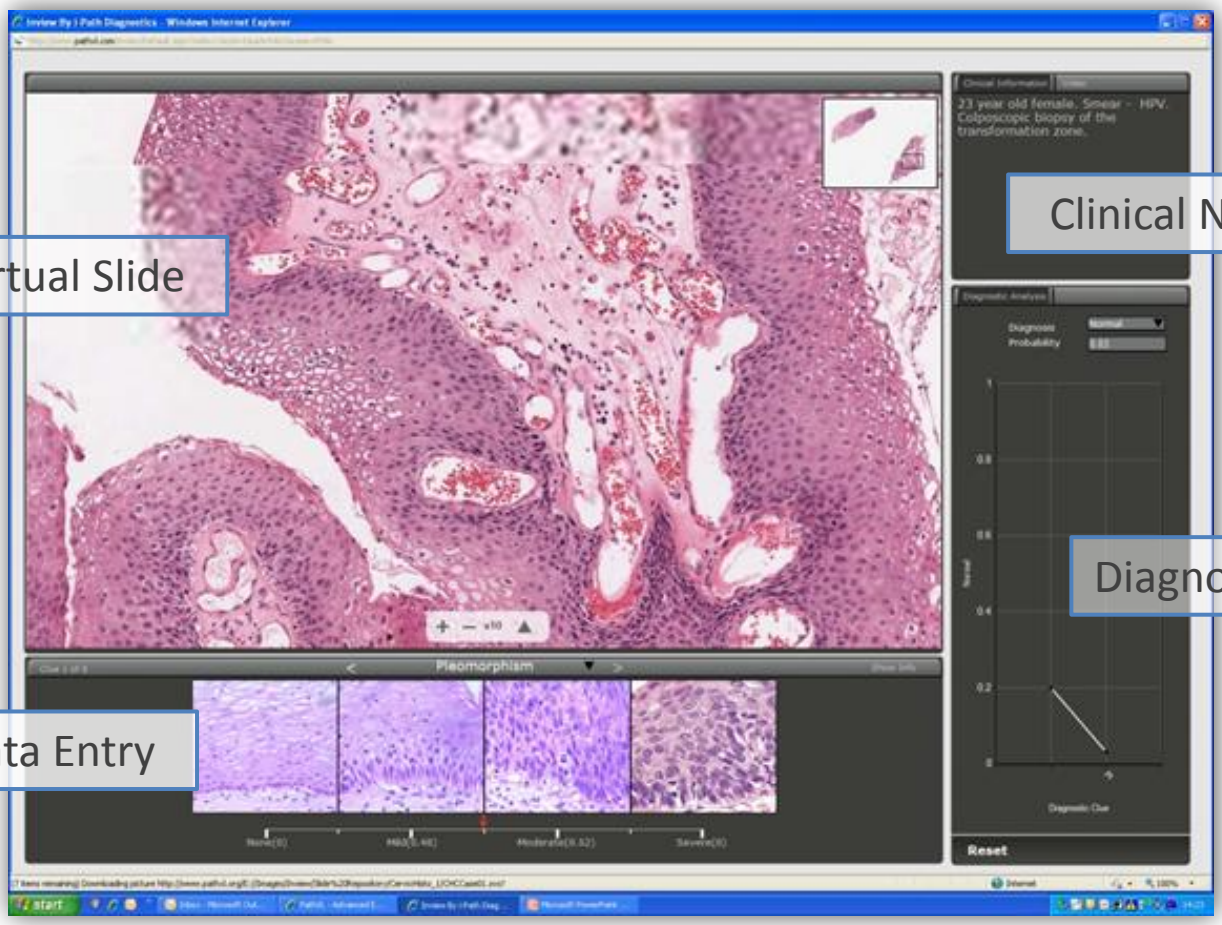






Nuclear Pleomorphism





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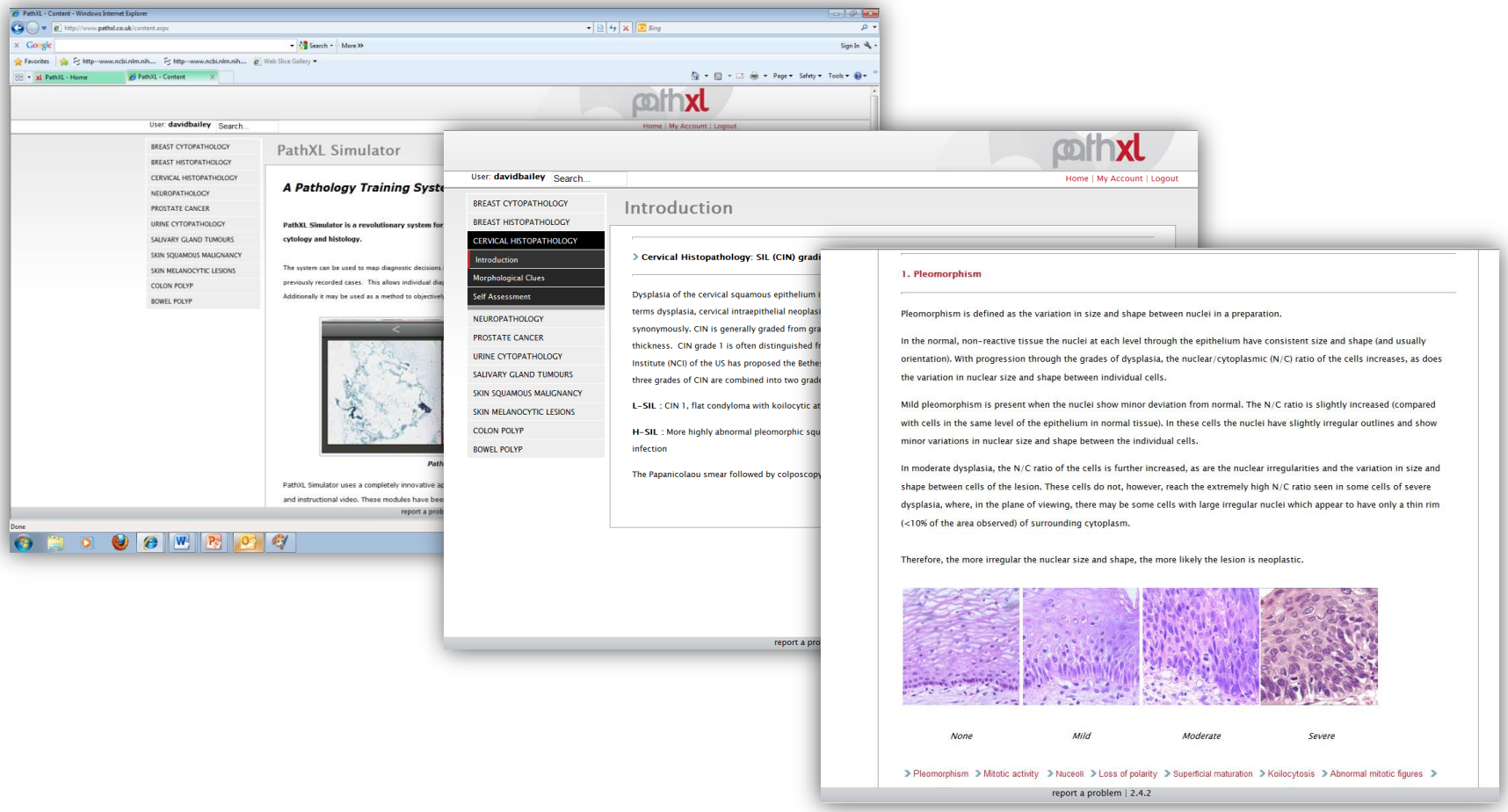
PathXL Simulator



PathXL Simulator

- Deconstruct diagnosis into key components
- Defined series of Diagnostic Clues *(& Grades*)
- Decision analysis based on image comparison
- Objective tracking of the decision process
- Objective assessment of performance *(& Feedback*)
- Comparison with experienced pathologist
- Multi-media training

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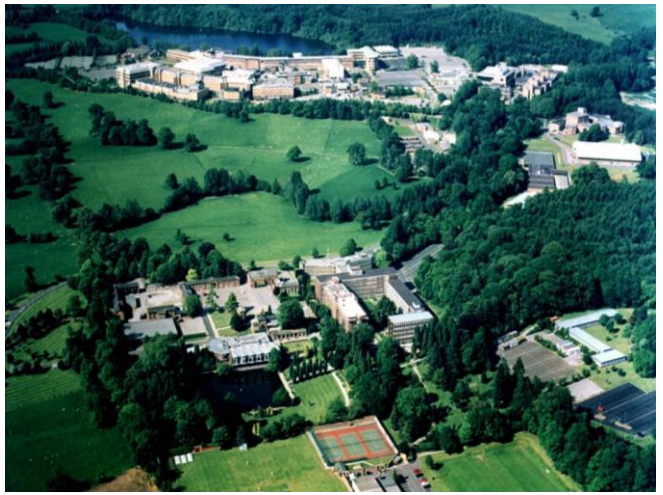
Launch Demonstration

Professor Christopher Womack

- Principal Clinical Histopathologist, Oncology Translational Science
- Acting Global Biobank Head
- Honorary Professor School of Cancer and Enabling sciences, University of Manchester, UK



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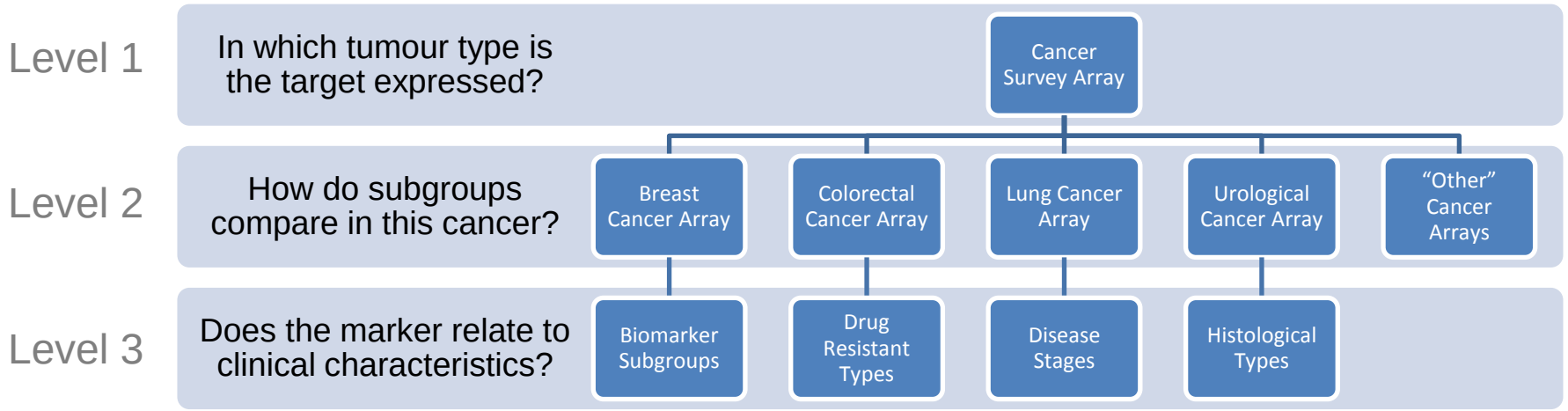
AZ 3-tier oncology target-disease linkage TMA strategy



Jenkins M & Womack C ISBER 2010

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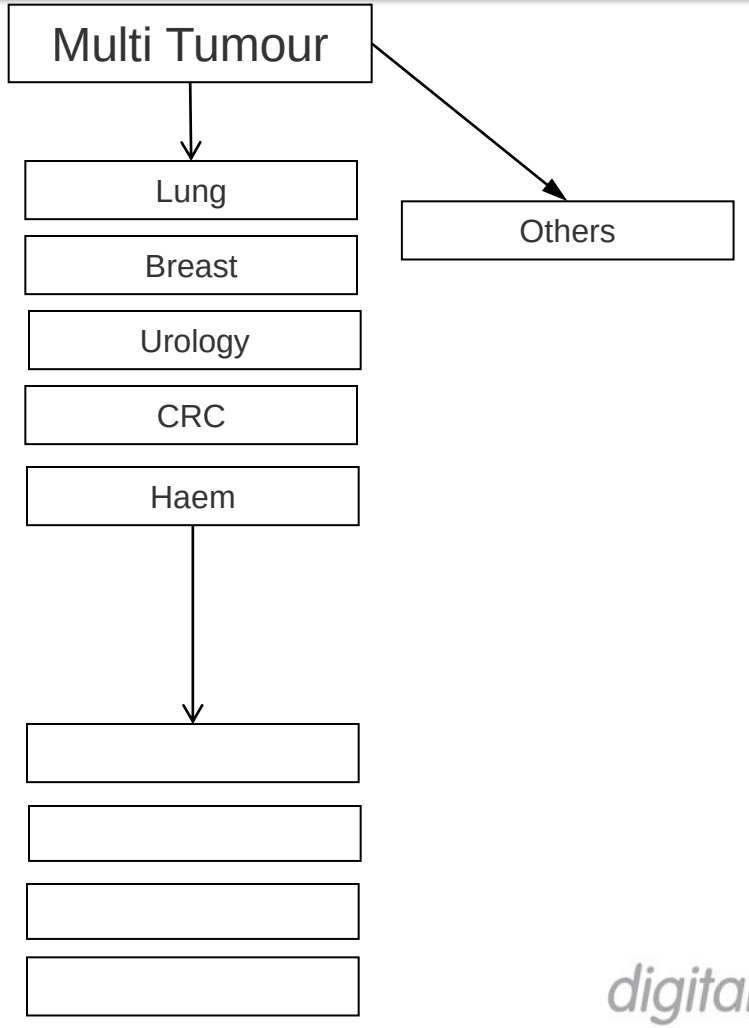
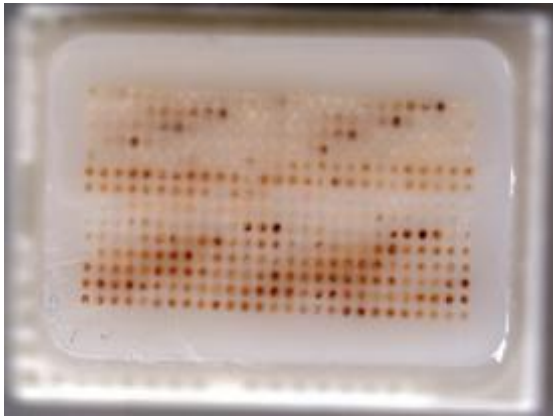
TMA cascade

Target Expression

Disease Area Linkage

Disease Segments (*prioritised*)





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TMA cascade

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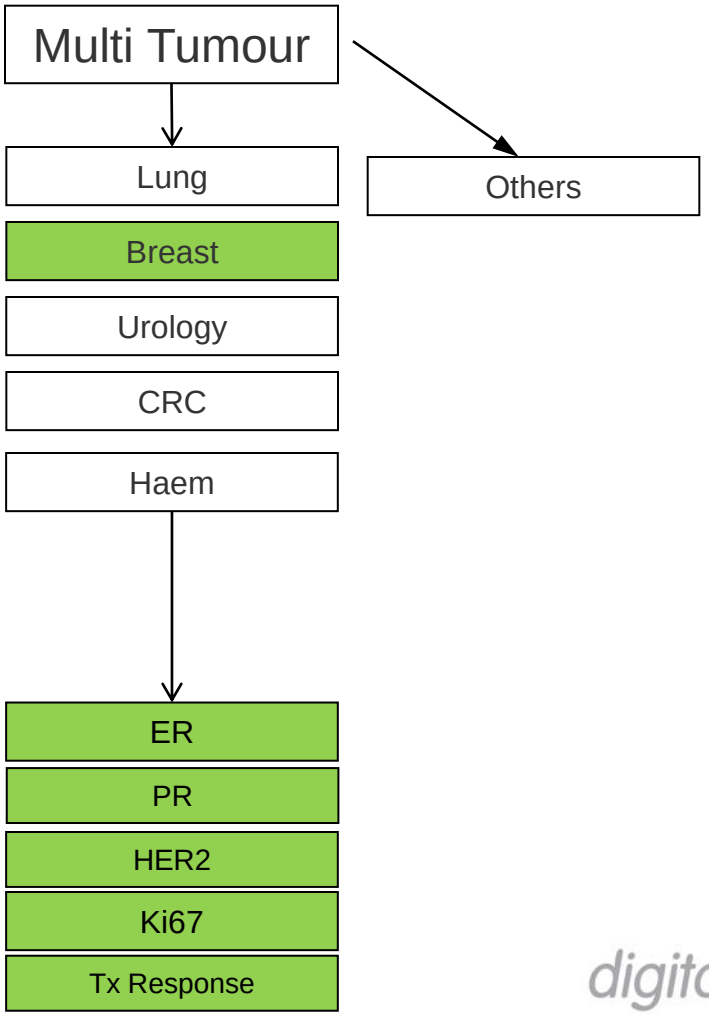

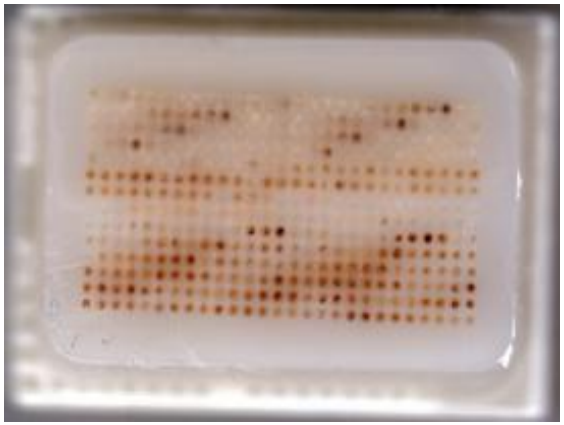

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More pathologists

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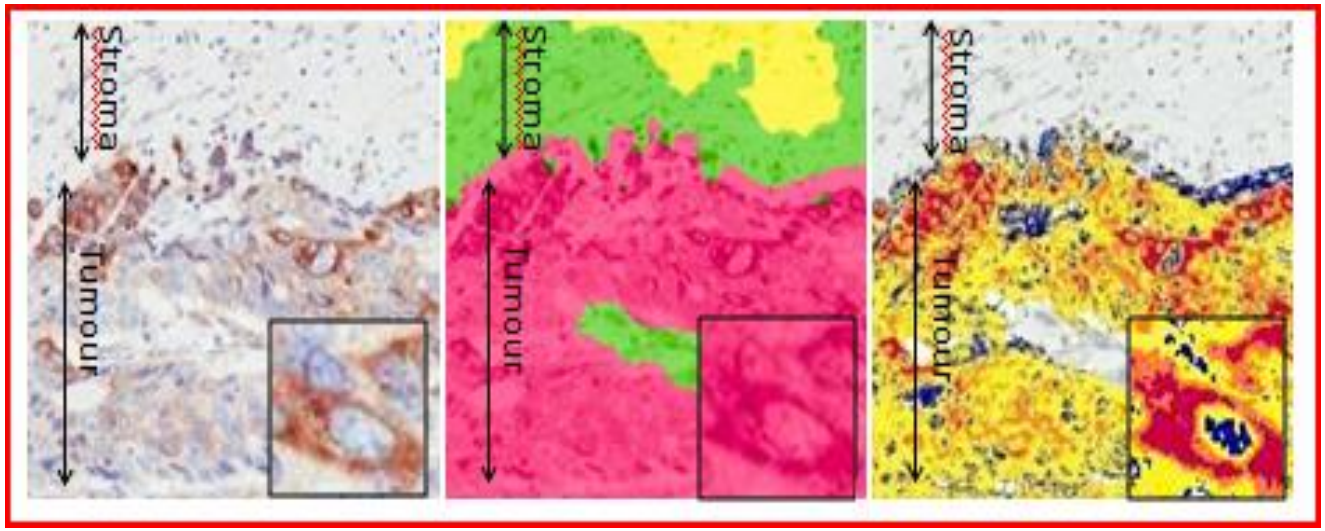
Image Analysis



Elevated stromal Foxp3+ regulatory T cells combined with low density CD8+ cytotoxic T cells are associated with colorectal metastatic tumour progression

H.K. Angell[1], X. Huan[2], S. Mistry[2], M. Cumberbatch[2], N. Gray[2], C. Womack[2], S.A. Watson[3], D.I. Pritchard[1], R.W. Wilkinson[4]

NCRI 2011

Quantitative assessment of tumour infiltrating lymphocytes using Genie™ pattern recognition software for the separate analysis of tumour versus stroma in head and neck squamous cell carcinoma (HNSCC) improves biomarker reproducibility

X. H. Yap[1], H. K. Angell[2], N. Gray[1], C. Womack[1], R. W. Wilkinson[1], M. Cumberbatch[1]

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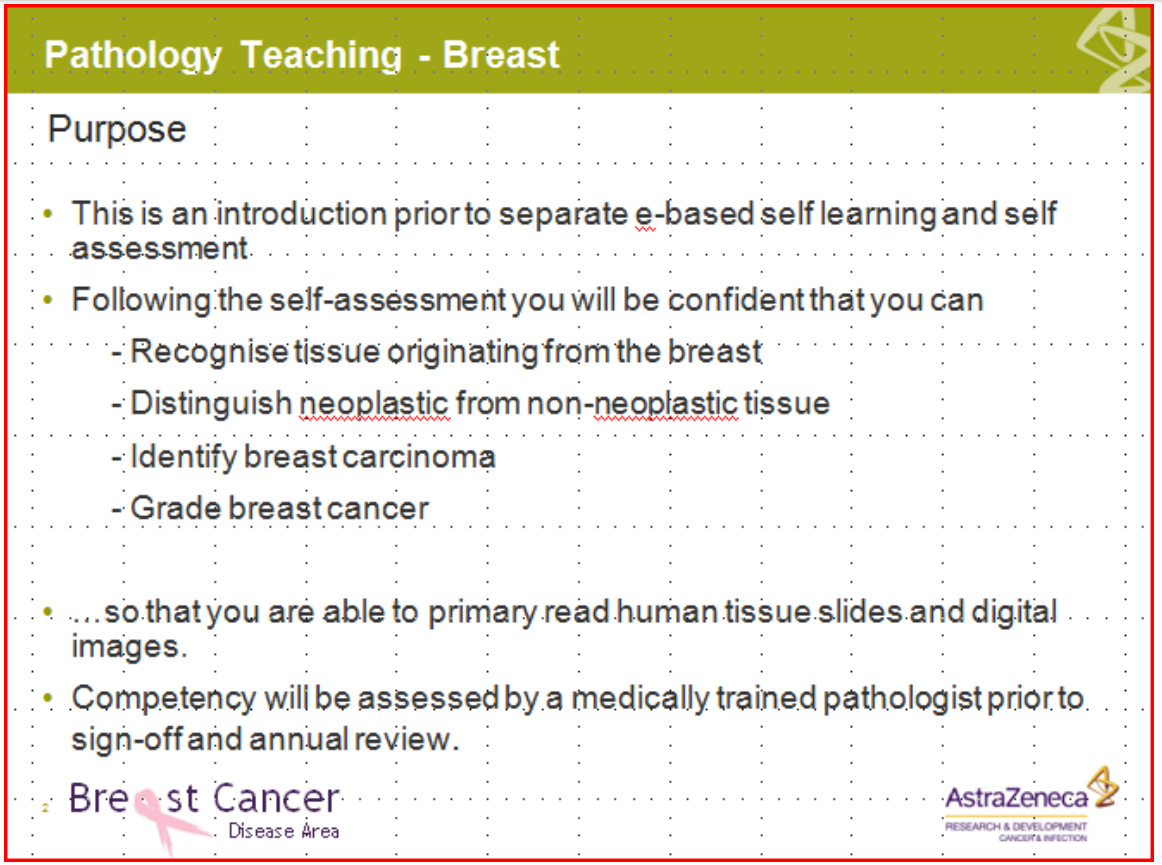
Trained Scientists

1. Intro modules
2. Simulator
3. Microscope Sessions
4. Competency Assessment



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What PathXL enables for us

- Fits in to a learning package of self teaching and training for non medical scientists in oncology drug development
- Specifically, provides logical, structured, pathologist-developed morphological approach that mimics real diagnosis
- Supplements but does not replace pathologist 1:1 training and continuous assessment
- Facilitates high throughput immunohistochemistry and image analysis for biomarker-disease linkage:
    - Improves efficiency
    - Reduces timelines

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Thank You

Any Questions?

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