

MetaSystems: Innovator in Automated Imaging

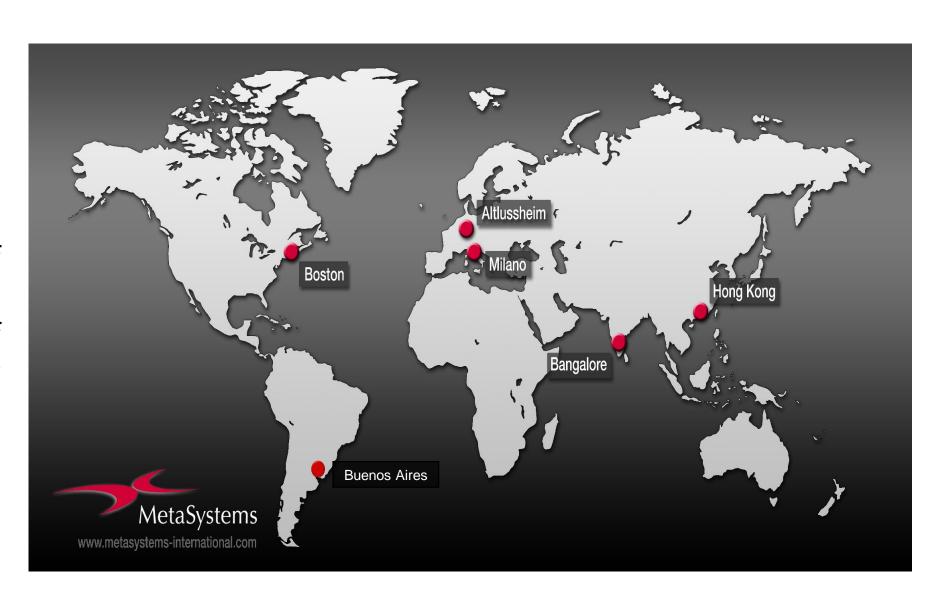
Jada Selma, PhD¹

1 MetaSystems Group, Inc., Medford, MA, USA

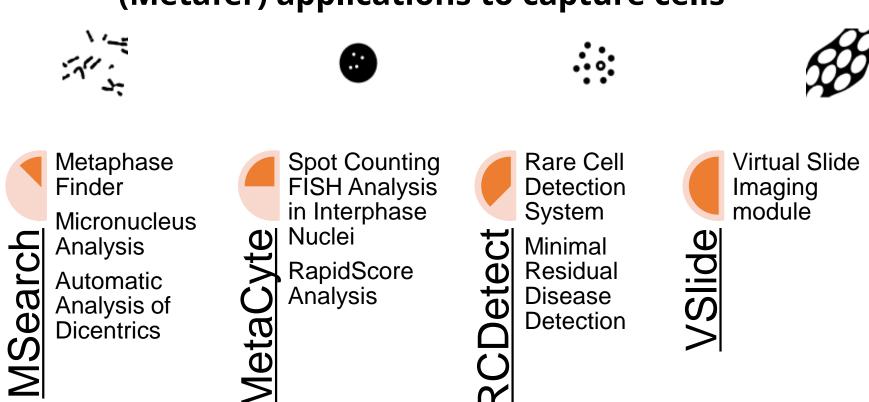


MetaSystems: Who We Are

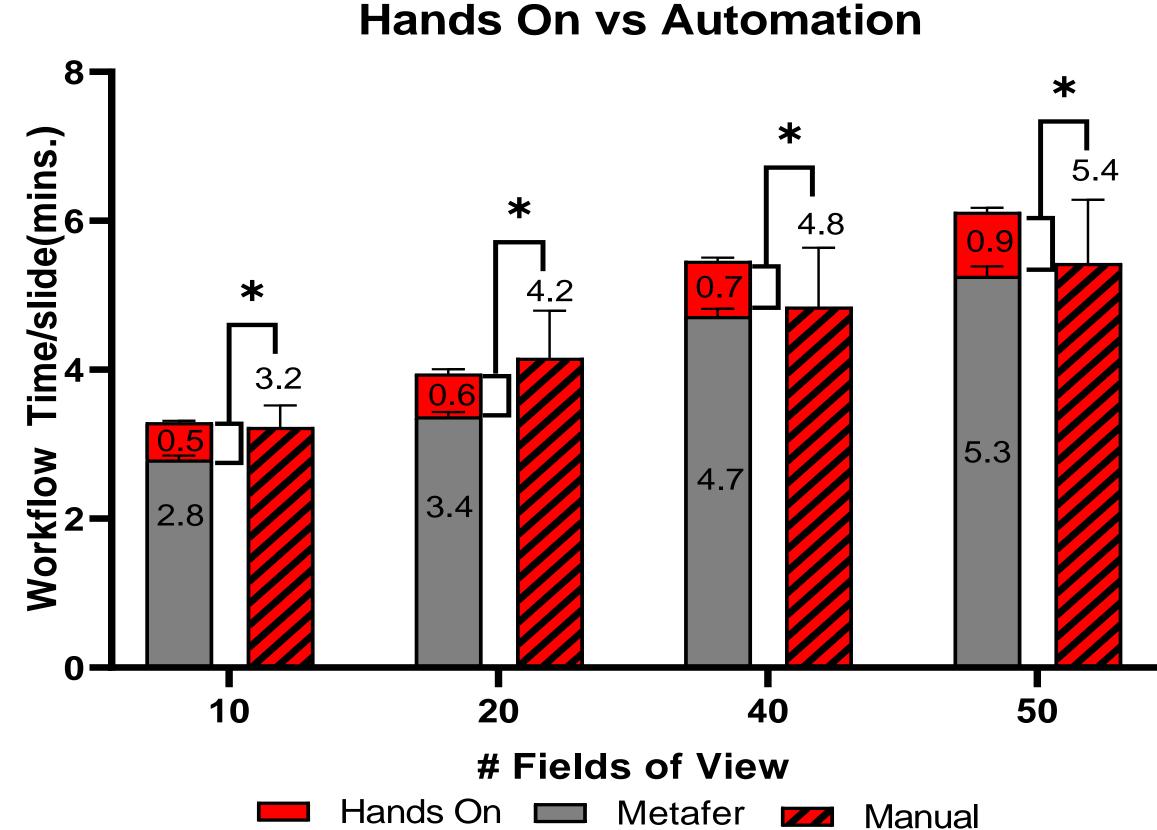
- *MetaSystems is a global employee-owned, German company specializing in automated scanning and image analysis.
- *Founded in 1986 as spin-off from the Institute of Applied Physics at the University of Heidelberg, the company started with the development of an automatic metaphase finding system.
- *More than **2,300** intuitions across **95 countries** rely on the quality and stability of MetaSystems products.
- MetaSystems software allows technologists to process their work quickly (digital workspace)



MetaSystems creates innovative software (Metafer) applications to capture cells

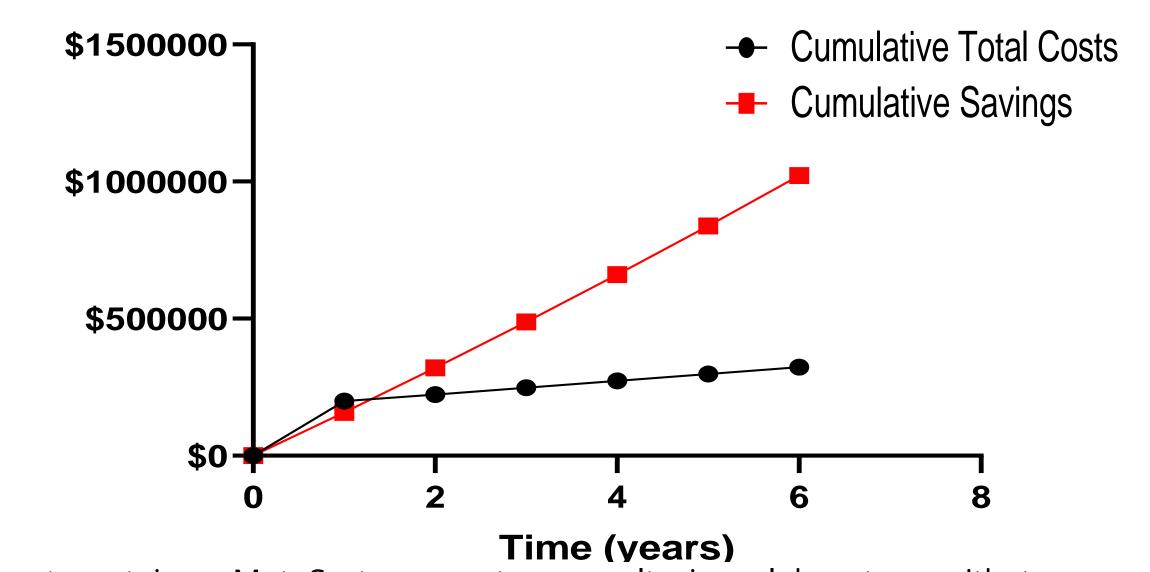


Metafer Significantly Reduces Time at the Microscope and Lab Costs



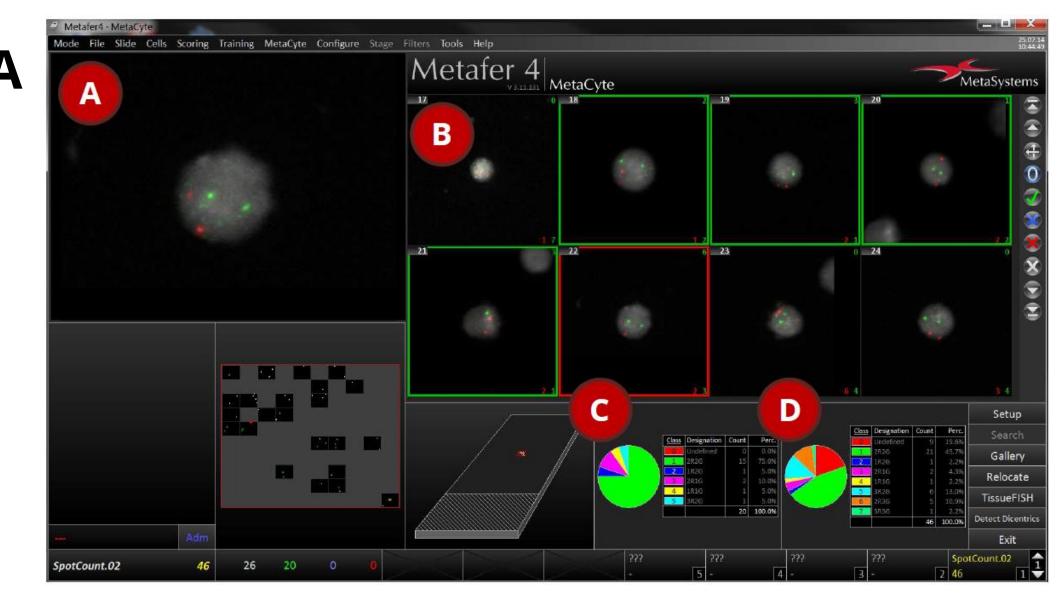
Automation through Metafer results in significantly less time compared to the manual method in which technologists are required to be at the microscope or computer. Data expressed as \pm SD. Statistical significance, \star P<0.5, determined by two-way ANOVA with Tukey's post-hoc test, n=5 slides per group.

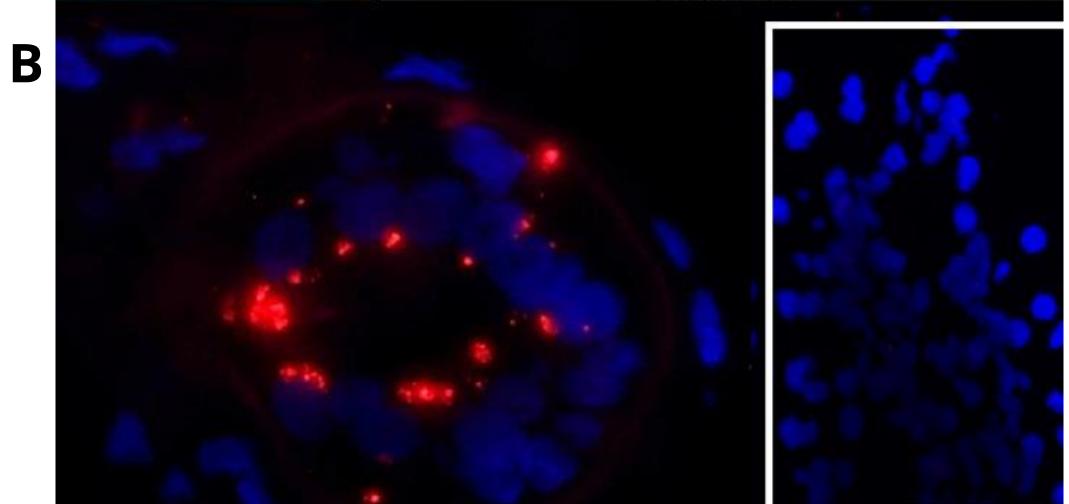
Return on Investment



Investment in a MetaSystems system results in a laboratory with two medical technologist and one assistant breaking even at 1.3 years and saving over \$1 million in 5 years.

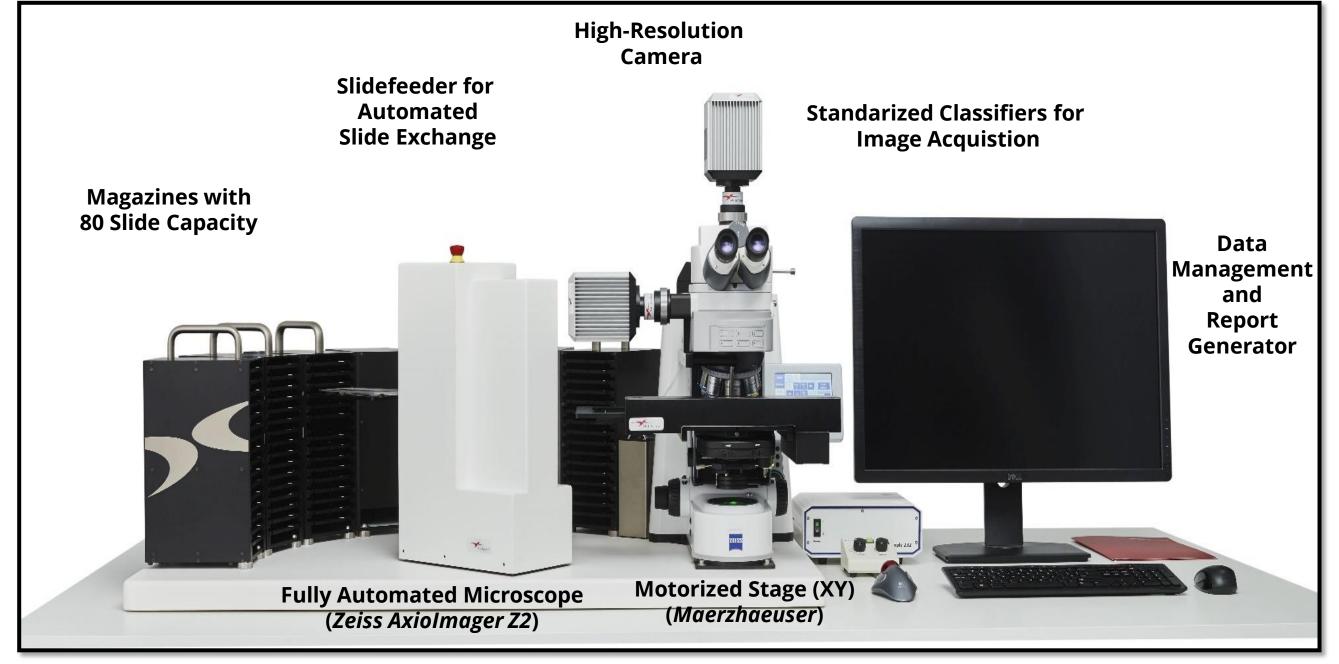
Metafer Automatically Scans FISH Slides





MetaSystems provides accurate scanning technology and DNA/RNA probes for fluorescence in situ hybridization (FISH). (A) Rapid Scoring (RS) is a method for analyzing FISH signals which combines manual scoring strategies with the advantages of automated scoring. RS uses MetaCyte to automatically score cell signal patterns. An enlarged image of the unprocessed cell facilitates evaluation of signal patterns (Part A). All analyzed cells are displayed in a gallery (Part B). An empty scoring sheet displayed left of the automated results (Part C) dynamically displays results of cells that the technician recategorizes from the automated results. Signal patterns are summarized in a convenient graph and a table (Part D). (B) RNA FISH analysis performed on a dermatology biopsy utilizing MetaSystems HuluFISH probe to detect SARS-CoV-2 (red). Negative control shown in the inset (image adapted from Giantolli et al, 20211).

MetaSystems Automated Imaging System



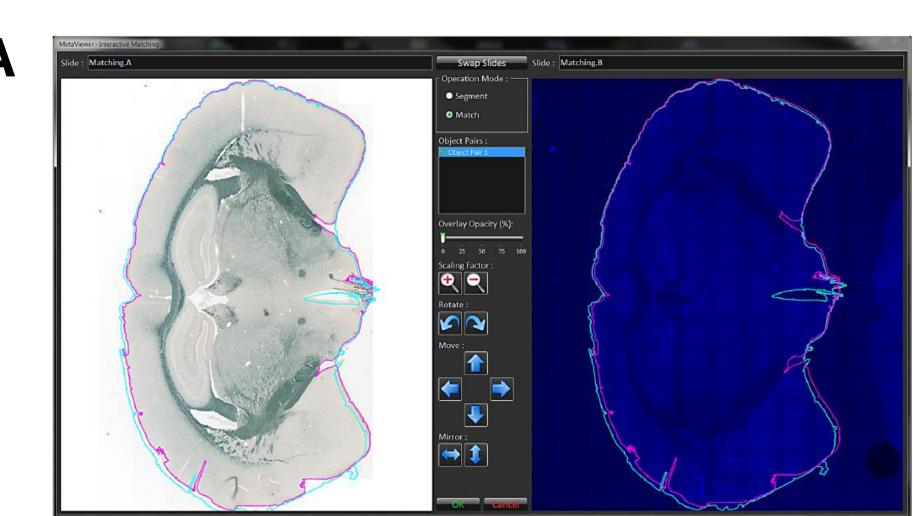


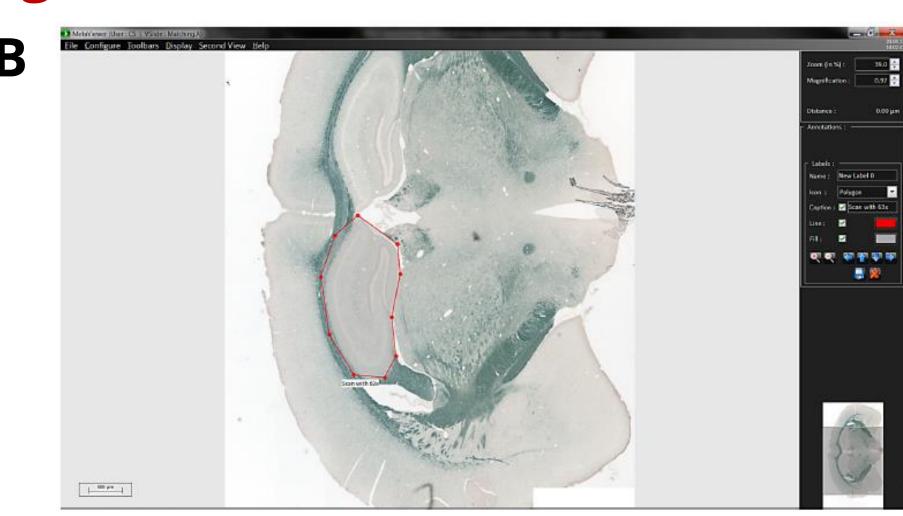
Contact Information

Please feel free to contact our Science Liaison and Studies Coordinator, Dr. Jada Selma at jselma@metasystems.org.

For more information, please visit www.metasystems.org or contact info@metasystems.org.

Metafer Allows For Matching Serial Tissue Sections





Serial sections of the same tissue block are often stained via varying methods (color, fluorescence, etc.). Sometimes it is difficult, however, to analyze the same region of interest in these differently stained tissue sections. (A) Vslide tool in Metafer allows for easy segmentation, alignment, and matching of serial sections from the same tissue block. (B) After matching tissue sections, any region can be selected in Metafer to be rescanned in the target tissue.