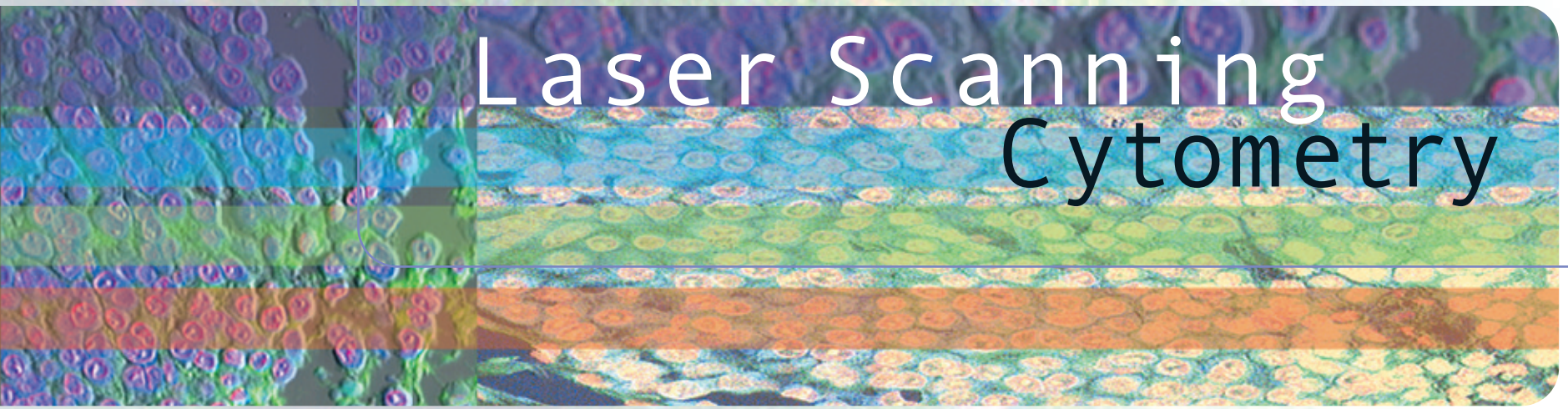


Laser Scanning Cytometry

Discover the new world of high content cellular analysis.

CompuCyte

FLOW CYTOMETRY

Laser Scanning Cytometry

IMAGE PROCESSING

Laser Scanning Cytometry is much more than a hybrid of technologies. It uniquely combines the advantages of Flow Cytometry, Image Analysis, and Automated Fluorescence Microscopy, and synergistically leverages them into a technology whose strengths exceed the sum of its parts.

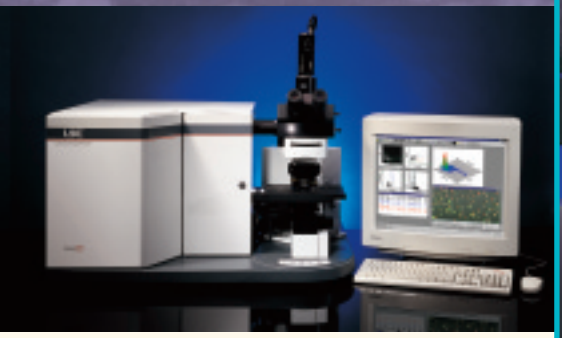
Laser Scanning Cytometry provides unique flexibility in the continuum of analysis from molecules in solution to high content cellular analysis in tissue.

With Laser Scanning Cytometry you can:

- Generate stoichiometric data and analyze heterogeneous populations in FCS list-mode format.
- View any number of individual events in the population data.
- Visualize specimens conventionally with the microscope or with powerful laser-scanned imaging techniques.
- Reanalyze the same cells under varying conditions and perform kinetic experiments with merged data sets.
- Measure and localize cellular constituents.
- Analyze cells in their natural environment to study the crucial interactions between cells of different types.
- Detect molecular constituents in the surrounding environment and correlate their presence to cell processes.
- Study cultured cells on the individual- and colony-level simultaneously.

FLUORESCENCE MICROSCOPY

The LSC is a digital microscope, simultaneously obtaining multiple high-resolution widefield images from a multiplicity of fluorescence detectors.



RAPIDLY ANALYZE

The LSC® Laser Scanning Cytometer — Unsurpassed flexibility in high content cellular analysis and biomedical investigation.

Consider why the LSC is the ultimate in high content digital microscopy:

- *Obtain up to 10 fluorescent or light scatter images simultaneously.*
- *Accentuate the critical details with color-merged images.*
- *Visualize "invisible" infrared fluorescence.*

Many researchers recall their first view through a fluorescent microscope as a memorable event. The brightness and purity of the colors against a black background reveal the stunning beauty of life at the cellular level. The LSC brings you the advantages of fluorescent microscopy but spares you the tedious, iterative adjustments of microscope shutters and camera exposure settings.

Simultaneously visualize and analyze multiple channels of information. Place a specimen on the automated stage of the LSC's microscope and scan. The LSC automatically generates sharp images from up to 10 combinations of detector and laser excitation. View the images in discrete detectors to ascertain the relative intensities of each fluorochrome, or selectively combine the detector outputs into a virtual CompuColor™ image. Visualize infrared fluorescence and discriminate between same-color fluorescence from different excitation sources.

Patented laser scatter imaging adds 3-dimensional, Nomarski-like brightfield information to fluorescent images.

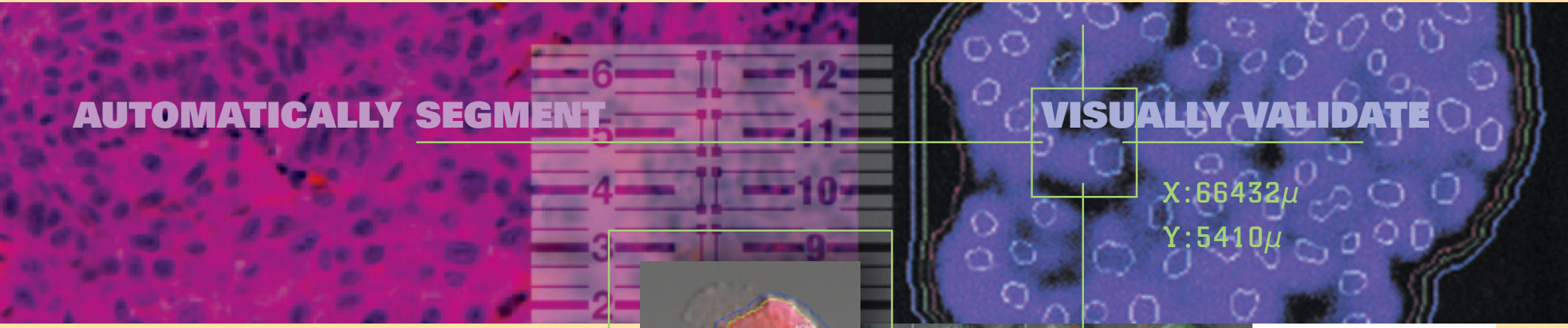
Automatically segment cells or other objects of interest. The LSC applies user-defined sets of rules to segment cells or other objects of interest. Once segmented, the powerful image processing software automatically extracts measurements for a long list of event features:

- total fluorescence at each detector wavelength
- peak brightness of each detector's signal
- absolute position of the event
- nuclear vs. peripheral fluorescence
- area, perimeter, fluorescence texture, and much more

Segment subcellular objects. The LSC can look within segmented nuclei to find, count, and quantitate the fluorescence of Fluorescent In Situ Hybridization (FISH) probe spots, or it can look around a segmented nucleus to find cytoplasmic fluorescence and distinguish it from nuclear fluorescence.

The hallmark of Laser Scanning Cytometry is rapid acquisition of high content, stoichiometric data, combined with high quality automated imaging of any or every event in your data file.

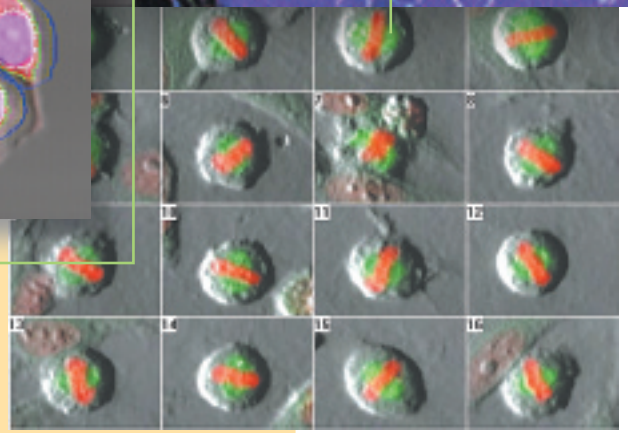
The LSC is an image processor, automatically segmenting cells and rapidly measuring stoichiometric quantitative and morphological features of each cell.



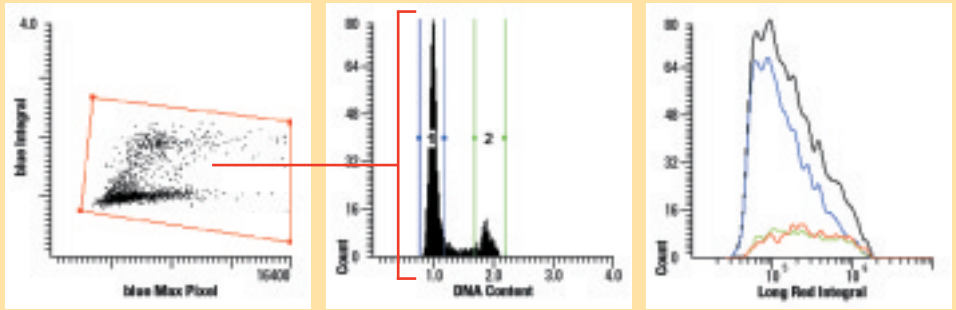
The LSC synergistically combines its population analysis capabilities with its imaging capabilities to allow visual confirmation of experimental results.

The LSC automatically identifies cells in a wide variety of specimen types, and rapidly extracts many features from large numbers of cells, allowing the researcher to rapidly generate multidimensional data sets on heterogeneous populations.

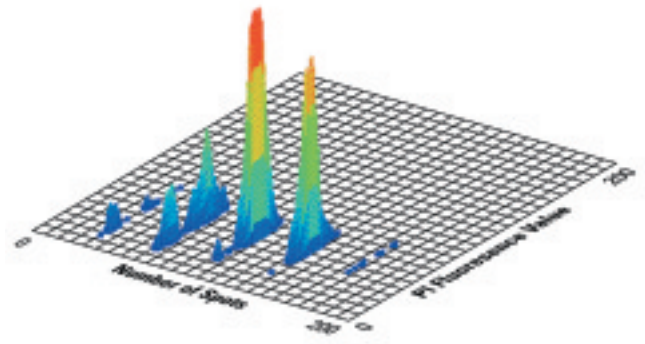
Display and analyze data using flow cytometry methodologies. Cytometry-based software techniques offer the best combination of power and ease of use for the intuitive display and analysis of the complex data sets that are routinely generated in high content cellular research.



Analyze population data and, with the click of the mouse, generate galleries of cells from specific populations. With high quality laser scan imaging, quickly confirm morphology without the need for microscope manipulation or camera exposure setting. Generate images from individual or combined detectors with CompuColor™.



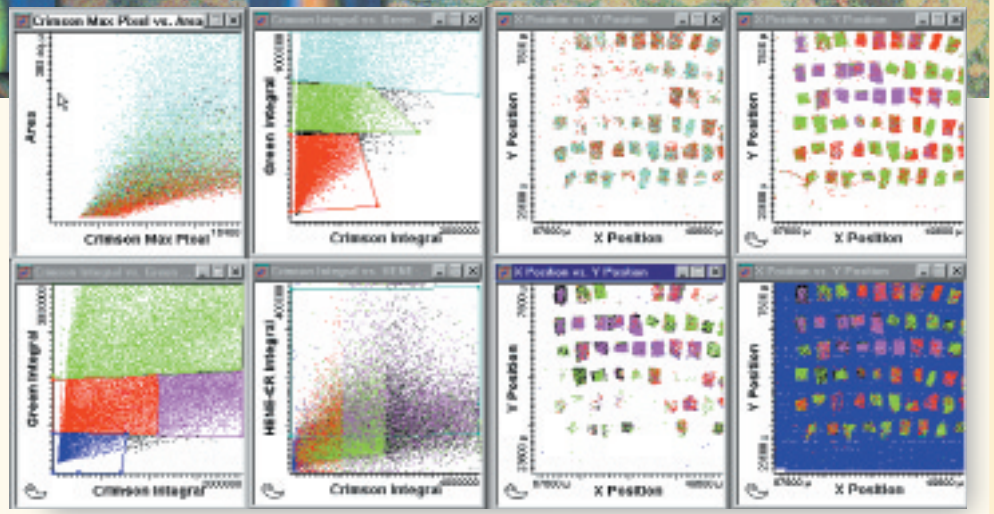
Display, gate, and calculate statistics for heterogeneous population data.



The LSC is a cytometer, with sophisticated analysis software that allows users to intuitively analyze and display multidimensional high content information.

UNSURPASSED SPECIMEN FLEXIBILITY

Study fixed cells or the complex processes of live cells as they function in their natural environment.



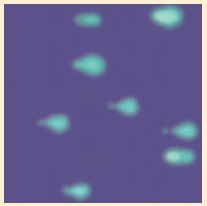
Tissue Array Analysis

By analyzing specimens that are attached to a surface, the LSC enables the study of cellular interactions and repeated measurements on the same cells over time.

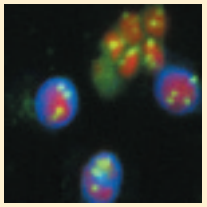
Perform kinetic experiments by merging data files.
With the precise position of each cell stored as a part of its data set, it is possible to merge multiple data files from different acquisition conditions. Analyze cells under one set of conditions, then treat them and analyze again, merging the data into a single file for easy analysis. The same software techniques make kinetic experiments straightforward.

APPLICATION TYPES

Fluorescent molecules in solution Instrument calibration and FRET studies.

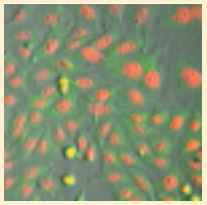


Comet Assay – Apoptosis studies in electrophoretic gels.



Nuclear analysis – Stoichiometric DNA content analysis.

Sub-nuclear quantitation – FISH spot counting and quantitation.

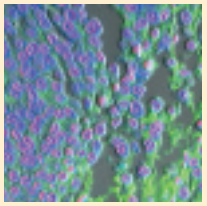


Cytoplasmic analysis –Translocation of proteins from the cytoplasm to the nucleus.

Cellular analysis – Multi-parameter cell phenotyping.

Colony analysis – Obtain information on cell colonies themselves (size, number of cells) as well as information on each of the cells in the colony.

Cells in tissue – Obtain data for individual cells comprising a tissue. Map tissue architecture.



Constituents in tissue – Obtain data for and map non-cellular constituents in tissues, such as immunoglobulins and cytokines.