



Tomorrow starts here.

# A GAME CHANGER-

## THREE DIMENSIONAL IMAGING FLOW CYTOMETER

Office of Technology Transfer  
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ECU physics professor Dr. Xin-Hua Hu had enough experience with flow cytometers to imagine he could create a better one. Used in the study of individual cells, flow cytometers use laser and electronic detectors to measure particular characteristics of cells as they are funneled through fast-moving stream of liquid. Standard devices use fluorescent light to gather info, but normal cells are mostly transparent and have no color for light to excite, so a stain must be applied to a cell to detect fluorescence. In collaboration with professor of physics Dr. Jun Quing Lu, and ECU physics department staff member, part-time PhD student, and hardware guru, Ken Jacobs, Hu created a flow cytometer that has the core principles of traditional flow cytometer mechanics and an improved flow chamber, but uses scattered light to analyze cell morphology. Scattered light is preferable because it contains more information about the three-dimensional structure of a cell due to the high coherence of the man-made laser light.

Commercialization of the diffraction-image flow cytometer and its software is ongoing as Dr. Hu and his team work to refine the software, the computing algorithm we use for 3D modeling and diffraction pattern analysis. Their creation has been eight years in the making and funded by two grants from the National Institutes of Health. Hu is vigilant and has confidence that his flow cytometer's ability to improve patient care and compete in a \$1.1 billion annual market, thanks to its broader data-gathering capabilities.

Source: [http://www.ecu.edu/cs-admin/mktg/patent\\_pending.cfm](http://www.ecu.edu/cs-admin/mktg/patent_pending.cfm)

# DR. XIN-HUA HU