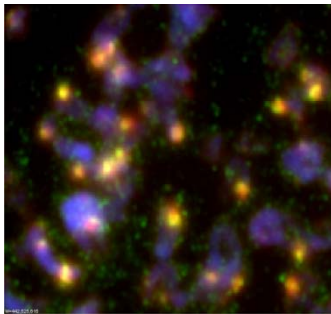


High-Speed and Super-Resolution Imaging with DeltaVision OMX

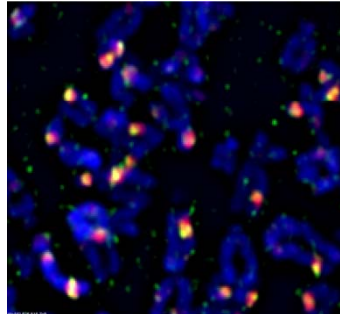


Presented by
Paul Goodwin, Director of Advanced
Applications Applied Precision

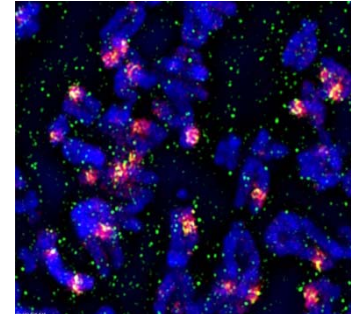
Raw Widefield Image *



Deconvolved Image*



OMX 3D SIM Image*



In conventional microscope systems, image resolution is limited by the angle of light that can successfully traverse the light path and enter the objective lens. While objectives can be built with very high numerical apertures, a limit is reached when light can no longer cross the interfaces between different refractive indices. At this point, Brewster's angle is achieved and additional light and information (resolution) are not able to be captured by the objective lens. This angle ultimately limits the resolution of all microscope systems. Once this limit is reached, a system is said to be 'diffraction limited'.

Super-Resolution is the term used to define an imaging system's capacity to exceed this limit - imposed by physics and the wavelength of light - and provide resolutions that are significantly better than the diffraction limit described above.

Over the past fifteen years, US company, Applied Precision has led the way in assisting scientists to fully exploit this limit with image restoration (deconvolution) microscopy. Now these limits have been further extended by the development of DeltaVision OMX, a 3D-structured illumination microscopy (SIM) system that enables super resolution imaging. The technology was developed by the labs of Drs. Sedat, Gustafsson, and Agard at UCSF. The University of Technology Sydney in July 2009 installed the first commercially released instrument in the world.

Date: 27th July,

Time: 4 to 5pm

Venue: Peter MacCallum Cancer Centre, Lecture theatre, 3rd floor main building.

Address: St. Andrew's Place, East Melbourne.

Refreshments will be served.

* Images above Courtesy of Asako Nakamura and William Bonner, NIH/NCI. Induced DNA damage stained for two repair proteins ; Red Alexa 555 and Green Alexa 488